

SPECIAL SESSION.
March, 1851.

[SENATE.]

MISCELLANEOUS.
No. 1. ✓

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1850/52
FIFTH ANNUAL REPORT

OF THE

BOARD OF REGENTS

OF

THE SMITHSONIAN INSTITUTION,

TO THE

SENATE AND HOUSE REPRESENTATIVES,

SHOWING THE

OPERATIONS, EXPENDITURES, AND CONDITION OF THE INSTITUTION,

DURING THE YEAR 1850.

MARCH 1, 1851.

Read.

MARCH 7, 1851.

Ordered, that the Report of the Smithsonian Institution be printed; and that three thousand additional copies be printed — one thousand copies of which for the use of the Smithsonian Institution.

WASHINGTON:

1851.

SMITHSONIAN INSTITUTION, *March 1, 1851.*

SIR:—I have the honor herewith to transmit to you the Annual Report of the Board of Regents of the Smithsonian Institution, and beg leave to request that you will present the same to the Senate of the United States.

I am very respectfully,

Your obedient servant,

JOSEPH HENRY,

Secretary Smithsonian Institution.

HON. WILLIAM R. KING,
President United States Senate.

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FIFTH ANNUAL REPORT

Of the Board of Regents of the Smithsonian Institution, showing the Operations, Expenditures and Condition of the Institution, up to January 1, 1851.

To the Senate and House of Representatives:

In obedience to the act of Congress of August 10, 1846, establishing the Smithsonian Institution, the undersigned, in behalf of the Regents, submit to Congress, as a Report of the operations, expenditures and condition of the Institution, the following documents:

1. Annual Report of the Secretary, giving an account of the operations of the Institution during the year 1850, including Reports from the Assistant Secretaries, relative to the Library and Museum.
2. Report of the Executive Committee, giving a general statement of the proceeds and disposition of the Smithsonian Fund, and also a detailed account of all the expenditures from the beginning of the Institution to the end of 1850.
3. Report of the Building Committee, relative to the progress made in 1850, in the erection of the Smithsonian edifice, including a Report of the Architect on the same.
4. Proceedings of the Board of Regents during their Fifth Annual Meeting.
5. An Appendix.

Respectfully submitted,

ROGER B. TANEY,
Chancellor,
JOSEPH HENRY,
Secretary.

REPORT OF THE SECRETARY.

To the Board of Regents of the Smithsonian Institution:

GENTLEMEN:—During the past year the several parts of the plan of organization have been prosecuted as efficiently as the portion of the income which could be devoted to them would permit. The financial affairs are in a prosperous condition, and though the funds are burthened with the erection of a costly building, and the expenditures trammelled by restrictions growing out of the requisitions of the charter of incorporation, yet the results thus far obtained, are such as satisfactorily to prove that the Institution is doing good service in the way of promoting and diffusing knowledge.

Though the programme of organization has been given in two of the annual reports and extensively published in the newspapers, its character does not appear to be as widely known and as properly appreciated as could be desired. Indeed it will be necessary at intervals to republish the terms of the bequest, and also the general principles of the plan which

has been adopted, in order that the public may not only be informed of what the Institution is accomplishing, but also reminded of what ought reasonably to be expected from its operations. Moreover, there is a tendency in the management of public institutions to lose sight of the object for which they were established, and hence it becomes important frequently to advert to the principles by which they ought to be governed. I beg leave, therefore, as introductory to this report, briefly to recapitulate some of the propositions of the programme of organization, and to state some of the facts connected with its adoption.

SMITHSON left his property, in case of the death of his nephew, to whom it was first bequeathed, "to found at Washington under the name of the Smithsonian Institution, an establishment for the increase and diffusion of knowledge among men." These are the only words of the testator to serve as a guide to the adoption of a plan for the execution of his benevolent design. They are found, however, when attentively considered to admit of legitimate deductions sufficiently definite and comprehensive.

1. The bequest is made to the United States, in trust for the good of *mankind*.

2. The objects of the Institution are two-fold; first, to increase, second, to diffuse knowledge; objects which, though often confounded with each other, are logically distinct and ought to be separately regarded. The first is the enlargement of the existing stock of knowledge by the discovery of new truths, and the second is the dissemination of these and other truths among men.

3. No particular kind of knowledge is designated, hence a liberal interpretation of the bequest will exclude no part of the great domain of science and literature from the degree of attention its importance may demand.

4. Since mankind are to be benefitted by the bequest, any unnecessary expenditure on merely local objects, would not be in accordance with the proper administration of the trust.

5. Though the funds are generally considered large, and much is expected of them, they are really small in proportion to the demands made upon them. The annual income of the bequest, is less than half the cost of the publication of a single yearly report of the Patent office.

6. In order therefore, that the limited income may effect the greatest amount of good, it should be expended in doing that which cannot be done as well by other means.

These views which have commanded the assent of all unprejudiced and reflecting persons, who have studied the subject, have been the guiding principles in all cases in which I have had any power of direction, and I am happy to say they are fully adopted by the present directors and officers of the Institution.

To carry out the design of the testator, various plans were proposed, but most of these were founded on an imperfect apprehension of the terms of the Will. The great majority of them contemplated merely the diffusion of popular information, and neglected the first and the most prominent requisition of the bequest, namely: the "increase of knowledge." The only plan in strict conformity with the terms of the Will, and which especially commended itself to men of science, a class to which Smithson himself belonged, was that of an active living organization, intended principally to promote the discovery and diffusion of new truths by instituting original researches, under the direction of suitable persons, in History,

Antiquities, Ethnology and the various branches of Physical Science, and by publishing and distributing among libraries and other public institutions, accounts of the results which might thus be obtained, as well as of those of the labors of men of talent which could not otherwise be given to the world.

This plan which was probably in the mind of the donor when he gave expression to the few but comprehensive words which indicate the objects of the bequest, is found from our experience to be eminently practical. It requires no costly building or expensive permanent establishment. Its operations, limited only by the amount of the income, are such as to affect the condition of man wherever literature and science are cultivated, while it tends in this country to give an impulse to original thought, which, amidst the strife of politics, and the inordinate pursuit of wealth, is of all things most desirable.

It was with the hope of being able to assist in the practical development of this plan, that I was induced to accept the appointment of principal executive officer of the Institution. Many unforeseen obstacles however presented themselves to its full adoption, and its advocates soon found in contending with opposing views and adverse interests, a wide difference between what in their opinion ought to be done and what they could actually accomplish.

The plan was novel and by many considered entirely chimerical; indeed it could not be properly appreciated except by those who had been devoted to original research. Besides this, the law of Congress incorporating the Institution, while it did not forbid the expenditure of a part of the income for other objects, authorized the formation of a Library, a Museum and a Gallery of Art, and the erection of a building, on a liberal scale, for their accommodation. It was indeed the opinion of many that the whole income ought to be expended on these objects. The Regents did not consider themselves at liberty to disregard the indications of Congress, and the opinion expressed in favor of Collections, and after much discussion it was finally concluded to divide the income into two equal parts, and after deducting the general expenses, to devote one half to the active operations set forth in the plan just described; and the other, to the formation of a Library, a Museum and a Gallery of Art.

It was evident however that the small income of the original bequest, though in itself sufficient to do much good in the way of active operation was inadequate to carry out this more extended plan; to maintain the staff of attendants and to defray other contingent expenses incidental to a large establishment of this kind. Besides the Secretary and an Assistant to attend to the general operations, two principal assistants would be required, one to take charge of the Library and the other of the Museum of Natural History, and to these sufficient salaries must be given to secure the services of men of the first reputation and talents in their respective lines. It therefore became absolutely necessary that the income should be increased, and in order to do this, it was proposed to save the greater part of the \$242,000 of accrued interest which Congress had authorized to be expended in a building, by erecting at a cost not to exceed \$50,000 the nucleus of an edifice which could be expanded as the wants of the Institution might require, and to add the remainder to the principal.

Unfortunately however, for this proposition, Congress had presented, to the Institution, the great Museum of the Exploring Expedition, and a

majority of the Regents, supposing it necessary, to make immediate provision for the accommodation of this gift, had taken preliminary steps, previous to my appointment, to construct a large building, and indeed a majority of the committee, to which the matter was referred, had determined to adopt the plan of the present edifice. Strenuous opposition was however made to this; and as a compromise it was finally agreed to draw from the U. S. Treasury \$250,000 of accrued interest, and instead of expending this immediately in completing the plan of the proposed building, to invest it in treasury notes, then at par, and to finish the building in the course of five years, in part out of the interest of these notes, in part out of the sale of a portion of them, and also in part out of a portion of the annual interest accruing on the original bequest. It was estimated that in this way, at the end of five years, besides devoting \$250,000 to the building, the annual income of the Institution would be increased from \$30,000 to nearly \$40,000, a sum sufficient to carry out all the provisions of the programme.

After the resolutions relative to the division of the income between collections on the one hand and active operations on the other had been adopted, and the plan of finance as to the building had been settled, I was requested to confer with persons of literary and scientific reputation and to digest into the form of a general programme the several resolutions of the Board. In the programme which was thus produced and afterwards adopted, it is attempted to harmonize the different propositions of the Board and to render them all, library, collections, &c., as far as possible, subservient to a living, active organization. Though a valuable library will in time be accumulated, by donation and the exchange of the publications of the Institution, the design at first is to purchase only such books as are immediately necessary in the other operations of the Institution, or which cannot be procured in this country, and the Librarian is required to perform other duties than those which pertain to the office of an ordinary collector and curator of books. He is directed to report on plans of libraries, and the best method of managing them: to collect the statistics of the libraries of the United States: to make a general catalogue as far as possible of all the books in this country, and to procure all the information necessary for rendering the Institution a centre of bibliographical knowledge. Instead of attempting to form a miscellaneous collection of objects of nature and art, it is proposed to collect only those which will yield a harvest of new results, and to preserve principally such as are not found in other collections, or will serve to illustrate and verify the Smithsonian publications.

The tendency of an Institution in which collections form a prominent object, is constantly towards a stationary condition; with a given income, the time must inevitably come when the expenditures necessary to accommodate the articles with house room and attendance will just equal the receipts. There is indeed no plan by which the funds of an Institution may be more inefficiently expended, than that of filling a costly building with an indiscriminate collection of objects of curiosity, and giving these in charge to a set of inactive curators. Happily, the programme of organization and the system of expenditure which the Regents have adopted, if rigidly adhered to, will prevent this state of things, and happily the spirit of the present directors and officers who are to give the initial form to the

character of the Institution, is in accordance with as active operations as the state of the funds and requisitions of Congress will allow.

It is to be regretted that Congress did not leave the entire choice of the plan of organization to those who were to be intrusted with the management of the bequest, and that instead of the plan of a costly building, there had not been adopted the nucleus of a more simple edifice, which could have been modified to meet the wants which experience might indicate.

The original estimate for the building, furniture and improvement of the grounds was \$250,000, and could the actual cost have been confined to this sum, all the results anticipated from the scheme of finance which had been adopted, would have been realized at the end of five years. During the last year, however, it has been found necessary, for the better protection of the collections, to order the fire proofing of the interior of the edifice at an increased expense of \$44,000. This additional draft on the funds can only be met by extending the time for the completion of the building, and even this will require the appropriation of a portion of the income which ought to be devoted to other purposes. The active operations will suffer most by this draft on the income, since it will be made for the better accommodation of the Library and the Museum.

It must not be inferred from the foregoing account, that the affairs of the Institution are in an unfavorable condition; on the contrary, though they are not in every respect what could be wished, still, under the circumstances I have mentioned, they are much better than could have been anticipated. The funds are in a very prosperous state and all the obstacles in the way of the usefulness of the establishment, may, by judicious management in time be removed. The opposition which was made to the building, led to the adoption of the plan of finance to which I have heretofore adhered, and from this has been realized much more than could have been expected.

After all the expenditures which have been made on the building, grounds, publications, res arches, purchase of books and apparatus, not only is the original bequest untouched, but there is now on hand upwards of \$200,000 of accrued interest. This will be sufficient to finish the exterior of the building, including all the towers, the interior of the wings, ranges, and a part of the interior of the main edifice; which will afford sufficient accommodation for some years to come, and leave \$150,000 to be added to the principal.

This result has been produced by a rigid adherence to the determination of increasing the annual income, and in accordance with this, and in obedience to the direction of the Board of Regents, a petition has been presented to Congress, asking that \$150,000 may be taken from the Institution and placed in the Treasury of the United States, on the same terms as those of the acceptance of the original bequest, never to be expended, and yielding a perpetual interest of six per cent.

If this petition be granted, all the funds will be permanently and safely invested, and the original income will be increased from \$30,000 to nearly \$40,000. Out of this, beside carrying on the more important object of the plan, it is proposed to appropriate yearly, a small sum for the gradual completion of the interior of the building.

The great importance of a small addition to the income will be evident, when it is recollected that a definite sum is annually required to defray the necessary expenses of the establishment, and that after this has been

provided, every addition will tend to produce a greater proportional amount of useful effect. The proposed increase will be sufficient to pay all the salaries of the officers, and leave the original income in a great measure free to be applied to the objects contemplated in the plan.

At the last meeting of the Board, Professor Baird of Dickinson College, Penn'a., a gentleman distinguished for his attainments in science was appointed an Assistant Secretary in the department of Natural History. His appointment was made at this time, more particularly in order that his services might be secured to take charge of the publications and that we might avail ourselves of the ample experience which he had gained in this line. He entered on his duties in July last, and besides being actively engaged in organizing the department of Natural History, he has rendered important service in conducting our foreign exchanges and attending to the business of the press. This addition to our force was absolutely necessary to a more efficient discharge of the duties which devolve on us. No person, except from actual experience, can form an idea of the amount of labor required for the transaction of the ordinary business. The correspondence alone, is sufficient to occupy two persons continually during the usual office hours.

During the past year one half of the whole income has been appropriated to the building, and after deducting the general expenses, the remainder has been equally divided between the two great classes of objects designated in the plan. The portion of the income after these divisions, which could be devoted to any one object has been necessarily small; for example, all that could be expended for researches, publications and lectures, and indeed for every thing of which the public at a distance could take immediate cognizance has not exceeded \$4,500, and yet out of this sum we have been expected to produce results for which the whole income would be entirely inadequate. I trust however, that a proper consideration of the facts presented in the remainder of this report, will show that much has been done in proportion to the means at our command.

PUBLICATION OF ORIGINAL MEMOIRS.

The important aid which can be rendered to the promotion of knowledge by the publication, and in some cases by assistance in the preparation of important memoirs, is now beyond all question. Experience has thus far abundantly shown that much more matter of the most valuable character will be presented for publication, free of all charge, than the portion of the income devoted to this object will allow us to publish. Indeed there is now on hand or in preparation, more material of this kind than we shall be able with our limited income, to give to the world in two or three years. In view of this fact, I cannot repress the expression of regret which I have always felt, that the restrictions arising from the requisitions of Congress, do not permit a greater expenditure for this most important object. It is chiefly by the publications of the Institution that its fame is to be spread through the world, and the monument most befitting the name of Smithson, erected to his memory.

Most of the distinguished foreign literary and scientific societies have placed the Institution on their list of exchange, and in many instances have presented not only the current volume of their transactions, but also full sets of the preceding volumes. We have reason to believe that before

the expiration of another year, we shall receive in exchange the transactions of nearly all the learned societies of the world, and that the Institution will be recognized by them as an active co-operator in the promotion of knowledge. Professor Baird has furnished a list of the literary and scientific societies to which the quarto volumes have been presented. [See Appendix.]

The following Memoirs, an account of which was given in my last report have been printed, or are now in the press :

1. Researches relative to the planet Neptune; by S. C. Walker.
2. Contributions to the Physical Geography of the United States; by Charles Ellet, Jr.
3. Memoir on the Explosiveness of Nitre; by Dr. Robert Hare.
4. On the Aboriginal Monuments of the State of New York; by E. G. Squier.
5. Memoir on the Reciprocal Action of two Galvanic Currents; by A. Secchi, of Georgetown College.
6. On the Classification of Insects, from Embryological Data; by Professor Louis Agassiz.
7. Monograph of Mosasaurus and the Allied Genera; by Dr. R. W. Gibbes.

Besides these, several other papers not described in my last report have been printed, and are ready for separate distribution. The first of these I shall mention, is by Professor Lieber, of the College, of South Carolina, on the vocal sounds of Laura Bridgman, the blind and deaf mute, whose mind, apparently for ever consigned to darkness, has been almost miraculously enlightened, by the sagacity, ingenuity and perseverance of Dr. Howe.

There is perhaps at this time, no living human being who offers to the psychologist, so attractive an object of study as this individual; and hence every observation relative to her peculiar habits is of great interest. Dr. Lieber has, from year to year during his summer vacations, been in the habit of visiting Laura Bridgman, and on one occasion, spent three months in her immediate neighborhood, for the purpose of studying the sounds which she utters as indicative of ideas. These sounds consist principally of such as she has voluntarily adopted to designate different individuals. The results of the observations given in this paper, are accompanied by a series of philosophical deductions and suggestions which cannot fail to interest the psychologist and physiologist. This memoir is illustrated by an engraved *fac simile* of a letter from Laura Bridgman's own hand.

The next paper is by Professor Bailey of West Point. This gentleman has rendered himself favorably known to the world of science by his researches on minute animals and plants, which, though mostly unseen by the naked eye, are found as widely distributed, and as permanent and definite in character as the largest organized objects in nature. This paper gives the results of a series of microscopic observations which the author made during his sojourn in the southern part of the United States, whither he was ordered last winter on account of his health. It designates numerous localities of microscopic animals and plants, and furnishes lists of the species found in each. It also contains a series of tables presenting a number of species with the different localities where each was found. The species so classed include those of the Desmidiæ, Diatomaceæ, Infusoriæ and Algæ. Following these is a description of numerous other species, most of which are represented by lithographic figures.

Among the interesting facts arrived at by the author, are the discovery of an extensive stratum of Fossil Infusoriæ near Tampa Bay, Florida—the existence of Infusoriæ in the rice fields of the south, and the demonstration of the cosmopolite character of many microscopic objects hitherto believed to exist only in Europe.

Another paper by the same author, but presented to the Institution by Professor Bache, Superintendent of the U. S. Coast Survey, has reference to a microscopic examination of soundings along the eastern coast of the United States. Samples of all the materials brought up by the sounding apparatus of the coast survey having been carefully preserved by Professor Bache in bottles, and so arranged as to present as it were, the surface geology of the bottom of the sea within a certain distance from the shore. Specimens of these were given to Professor Bailey for microscopic examination and the results are presented in this paper. It exhibits the fact of a high development of minute organic forms, mainly of Polythalamia, in all deep soundings, varying from fifty-one to ninety fathoms occurring in an abundance similar to that in which analogous fossil forms are found in the marls under the city of Charleston. It also shows that each locality has its predominant species, by means of which alone the region whence they were taken may be indicated. Many of the conclusions derived are of much interest to the mariner, the geologist and the naturalist. The paper closes with a brief description of the genera and species referred to, embracing several that are new, the whole accompanied by numerous figures.

In connection with the foregoing may be mentioned a paper by Mr. Charles Girard, entitled "A Monograph of the Fresh water Cottoids of North America," which has been accepted, and will soon be published. The species of fish called *Cottus gobio*, was supposed to be common to Europe and America, and thus to form an exception to a general rule in regard to the fresh water species of the two continents. It has been discovered by Mr. Girard and others, that the European species as described by Linnæus, is really composed of several, and that while none of these are found in North America, we have actually a number of species peculiar to this country. The memoir contains elaborate descriptions of the known species as well as of several new ones, together with copious notes on their scientific history, their geographical distribution, affinities with each other and with foreign species, anatomical structure, &c.—the whole illustrated by appropriate figures. It is worthy of remark, that most of the hitherto undescribed species presented in this memoir were collected by Professor Baird, and now form a part of the Smithsonian collection.

Another memoir now in course of preparation, is one which will, of itself occupy a considerable portion of one of the quarto volumes of the Smithsonian contributions. It affords an interesting illustration of the working of the plan of organization in the way of eliciting important scientific knowledge which would not otherwise be produced, or if produced, could not be given to the world through any other channel.

This memoir consists of a description of the marine plants or Algæ, which are found along the eastern and southern coasts of the United States, and which are deserving of attention, not only on account of their beauty, variety and the illustrations they present of the growth and development of vegetable forms, but also on account of their economical value with reference to agriculture and the chemical arts. This volume is in the

course of preparation by Professor Harvey of the University of Dublin, Ire and, a gentleman who is recognized as the first authority in this branch of Botany. He was induced to visit this country by an invitation to lecture on the Algæ before the Lowell Institute, and by the opportunity thus offered him of studying his favorite branch of science in a new region. After completing his lectures, he made a collection of the marine plants of our coast and offered to furnish drawings of the genera and species of them with detailed descriptions free of all cost, provided the Institution would bear the expense of publication.

Upon the warm recommendation of some of the principal botanists of this country, the liberal offer of Professor Harvey was accepted, and he is now engaged in making with his own hand the drawings on stone.—The preparation of the whole work besides the time expended in collecting the specimens, will occupy more than a year. This voluntary contribution to knowledge from a man of science may surprise those whose minds are not liberalized by philosophical pursuits, and who cannot conceive any object in labor unconnected with pecuniary gain.

It is proposed to color the plates of a part of the edition of this work and to offer the copies containing them for sale, to assist in defraying the heavy expense of the publication, and to issue the work in parts so as to distribute the cost through at least three years.

In addition to the foregoing an appendix—added to Mr. Squier's paper on the ancient monuments of New York—has been printed. Also, there has been such an urgent demand for copies of Mr. Ellet's paper on the physical geography of the Mississippi Valley, that it has been thought advisable to reprint it and distribute the whole of the first edition, among all persons to whom a knowledge of its contents would be of peculiar importance.

The several papers which have been described in this and the preceding report will, when collected together, form the contents of the second and part of the third volume.

The plan adopted of printing each memoir with a separate title and paging has been found to answer a good purpose. There is no delay in printing one paper on account of the engraving of the plates of another, and long before a volume can be completed, a separate memoir may be widely circulated among those most interested in its perusal. As an example of this, I may mention that one of the papers which forms part of the second volume of the contributions, has already been reprinted in the London and Edinburg Journal, with due credit given to this Institution.

REPORTS ON THE PROGRESS OF KNOWLEDGE.

The income of the Institution as yet, has not been sufficient for fully reducing to practice this part of the plan of organization. The preparation of these reports can only be entrusted to those who are familiar with the subjects, and well skilled in the art of composition, and the services of such persons cannot be obtained without an adequate remuneration. Of the several reports mentioned at the last meeting of the Board, but one has been published, viz: that on the discovery of the planet Neptune, by Dr. B. A. Gould, of Cambridge, editor of the *Astronomical Journal*. It has been stereotyped, and copies distributed amongst all our Meteorological

observers and other persons in the country, known to us as being actively engaged in promoting the science of Astronomy.

The preparation of the report on the Forest Trees of North America, though delayed in consequence of the absence of the author, Dr. Gray, of Harvard University, on a visit to Europe, is still in progress. The illustrations are in the hands of the artists, and the first part will probably be published during the present year. The cost of this report on account of the elaborate illustrations, will be greater than was at first anticipated, consequently the publication of the entire work must necessarily be spread over a number of years. It is believed, however, that a considerable part of the expense will be repaid to the Institution, by the sale of copies at a small advance on the original cost.

The other reports on the Progress of Knowledge mentioned in my last communication to the Regents are ready for the press and will be published in whole or in part during the present year.

The Report on the statistics of Libraries of the United States, prepared by Professor Jewett, has been ordered to be printed by Congress, as an appendix to the Regents' Report. A sufficient number of extra copies will be presented to the Institution, for distribution to all the libraries from which statistical information was received. It forms a volume of about two hundred and twenty-five pages, and will, I am sure, be considered an important contribution to Bibliographical Statistics.

DISTRIBUTION OF PUBLICATIONS,

We have found considerable difficulty in deciding upon the rules to be observed in the distribution of the Smithsonian publications. It must be evident that from the small portion of the income which can be devoted to this object the distribution must be circumscribed. Fifteen hundred copies of each memoir have been printed, but this number though all that the income could furnish, has not been found sufficient to meet a tenth part of the demand. It should be recollected that though these memoirs consist of the results of new investigations of the highest importance to the well being of man, in extending the bounds of his knowledge of the universe of mind and matter of which he forms a part; yet they are not in all cases of such a character as to be immediately appreciated by the popular mind, and indeed they are better adapted to instruct the teacher than to interest the general reader. They should, therefore, be distributed in such a way as most readily to meet the eye of those who will make the best use of them in diffusing a knowledge of their contents.

The following rules have been adopted for the distribution of the quarto volumes of collections of memoirs.

1. They are to be presented to all Learned Societies which publish transactions and give copies of these in exchange to the Institution.
2. Also, To all Foreign Libraries of the first class, provided they give in exchange, their catalogues, or other publications, or an equivalent from their duplicate volumes.
3. To all Colleges in actual operation in this country; provided they furnish in return, meteorological observations, catalogues of their Libraries and of their students, and all other publications issued by them, relative to their organization and history.

4. To all States and Territories; provided they give in return, copies of all documents published under their authority.
5. To all incorporated Public Libraries in this country, not included in either of the foregoing classes, now containing more than seven thousand volumes; and to smaller Libraries, where a whole State, or large district would be otherwise left unsupplied.

The author of each memoir receives, as his only compensation, a certain number of copies of it, to distribute among his friends, or to present to individuals who may be occupied in the same line of research. In this way single memoirs are distributed to individuals, and especially to those who are most actively engaged in promoting discoveries. Copies of the reports, and also in some cases, of particular memoirs, are sent to all meteorological observers. Besides these, we have placed on the list the more prominent Academies and Lyceums, as recipients of the minor publications. It is also intended, in order to benefit the public more generally, to place on sale copies of memoirs and reports, though on account of the number required for the supply of Institutions, we have not as yet, been able to carry this plan into effect.

No copyright has been taken for the Smithsonian publications; they are therefore free to be used by the compilers of books, and in this way they are beginning to reach the general reader and to produce a beneficial effect on the public mind.

METEOROLOGY.

The system of meteorology under the direction of the Smithsonian Institution, has, during the last year made good progress. And though the whole number of stations has not been much increased, yet the character of the instruments adopted, and consequently, the value of the observations, has been improved both in precision and variety.

This system is intended to embrace, as far as possible, the whole surface of North America, and to consist of three classes of observers. One class, without instruments, to record the changes in the aspect of the sky, the direction of the wind, the beginning and ending of rain, the appearance of the Aurora, &c. Another, in addition to the foregoing, to give an account of the changes of temperature, as indicated by the thermometer. A third class, furnished with full sets of instruments, to record all changes deemed important in the study of meteorology.

To carry on this system, the Institution has received or expects to receive assistance from the following sources:

1. From the small appropriation made by Congress, to be expended under the direction of the Navy Department.
2. From the appropriations made by different States of the Union.
3. From the observations made under the direction of the Medical Department of the United States Army.
4. From the Officers of Her Majesty's service in different parts of the British possessions in North America.
5. From observations made by institutions and individuals, in different parts of the continent, who report immediately to the Smithsonian Institution.

A small appropriation has been made by Congress for two years past, to be expended under the direction of the Navy Department for meteorolo-

gical purposes; and Professor Espy, engaged under the act making this appropriation, has been directed to co-operate with the Institution, in promotion of the common object. Besides the aid which we have received from Professor Espy's knowledge of this subject, the general system has been benefitted in the use of instruments purchased by the surplus of the appropriation, after paying the salary of the director and other expenses.

During the last year, Professor Espy has been engaged in a series of interesting and valuable experiments, on the variations of temperature, produced by a sudden change in the density of air. The results obtained are interesting in addition to science, and directly applicable to meteorology. The experiments were made in one of the rooms of the Smithsonian Institution, and with articles of apparatus belonging to the collection which constituted the liberal donation of Dr. Hare of Philadelphia. An account of these investigations will be given to the Secretary of the Navy in a report.

It was mentioned in the last report that the Regents of the University of the State of New York, in 1849, made a liberal appropriation of funds for the re-organization of the meteorological system of observations, established in 1825, and that Dr. T. Romeyn Beck, and the Hon. Gideon Hawley, to whom the enterprise was entrusted, had adopted the forms and the instruments, prepared under the direction of the Smithsonian Institution. Another appropriation has been made for 1850, and the system has been carried, during the past year, into successful operation by Professor Guyot, late of Neuchatel, in Switzerland. This gentleman, who has established a wide reputation as a meteorological observer, by his labors in his own country, was recommended to Dr. Beck and Mr. Hawley, by this Institution, and employed by them to superintend the fitting up of the instruments in their places, to instruct the observers in the minute details of their duty, and to determine the topographical character and elevation above the sea, of each station.

The whole number of stations which have been established in the State of New York is thirty-eight, including those which have been furnished with instruments by the Smithsonian Institution, and the Adirondack station by the liberality of Archibald McIntyre, Esq., of Albany. This number gives one station to twelve hundred and seventy square miles, or about one in each square of thirty-five and a half miles on a side. These stations are at very different heights above the level of the sea. They were selected in conference with Dr. Beck, Professor Guyot and myself. The state is naturally divided into the following topographical regions, namely:

1. The Southern or Maritime region.
2. The Eastern, or region of the Highlands and Catskill mountains, with the valleys of the Hudson and Mohawk rivers.
3. The Northern or region of the Adirondack mountains, isolated by the deep valleys of the Mohawk, Lake Champlain, the St. Lawrence and Lake Ontario.
4. The Western, or region of the western plateau, with the small lakes and sources of the rivers.
5. The region of the great lakes, Erie and Ontario.

I regret to state that no efficient steps have as yet been taken to organize the system of Massachusetts, for which an appropriation was made by the legislature, at its last session. I have lately written to Go-

vernor Briggs, urging immediate action, and offering, on the part of the Institution, to render any assistance in our power, towards furthering so laudable an enterprise. No answer has yet been received.*

The observations made at the different military stations, under the direction of the Medical Department of the United States Army, have been partially re-organized, and a number of new stations, and several of the old ones furnished with improved Smithsonian instruments. The head of the Medical Department of the Army, Dr. Lawson, has assigned the general direction of the system of observations to Dr. Mower of New York, to whom we are indebted for the valuable aid which this extended set of observations will furnish the general system. The immediate superintendence of the reduction of these observations is in charge of Dr. Wotherspoon, to whose zeal and scientific abilities, the cause of meteorology bids fair to be much indebted.

The most important service the Smithsonian Institution has rendered to meteorology during the past year, has been the general introduction into the country, of a more accurate set of instruments at a reasonable price. The set consists of a barometer, thermometer, hydrometer, wind-vane, and snow and rain gauge.

The barometer is made by James Green, No. 422 Broadway, New York, under the direction of the Institution. It has a glass cistern with an adjustable bottom enclosed in a brass cylinder. The barometer tube is also enclosed in a brass cylinder, which carries the vernier. The whole is suspended freely, from a ring at the top, so as to adjust itself to the vertical position. The bulb of the attached thermometer is enclosed in a brass envelope communicating with the interior of the brass tube, so as to be in the same condition with the mercury, and to indicate truly its temperature. Each instrument made according to this pattern, is numbered and accurately compared with a standard. In the comparisons made by Professor Guyot, a standard Fortin barometer, by Ernst of Paris, was employed; also a standard English barometer, by Newman, of London, belonging to this Institution. These instruments, for greater certainty, have been compared with the standard of the Cambridge Observatory, and of Columbia College, both by Newman; also with the standard of the Observatory of Toronto, Upper Canada.

The results of these examinations prove the barometers made by Mr. Green, according to the plan adopted by the Smithsonian Institution, to be trustworthy instruments.

The thermometers are by the same maker, and those intended for the State of New York, were compared with a standard by Bunten of Paris, and with another by Troughton & Simms of London. Those found to differ more than a given quantity, from the standards were rejected.

The instruments for detecting the variation of the hygrometrical condition of the atmosphere, consist of two thermometers, of the same dimensions, accurately graduated. The bulb of one of these is enveloped in a covering of muslin and moistened with water, and that of the other is naked.

The rain and snow gauges, and also the wind vanes, are made under the direction of the Institution, by Messrs. Pike & Son, 166 Broadway, New York. The rain gauge is an inverted cone of sheet zinc, of which the area

* A letter has since been received and the system placed under the direction of this Institution.

of the base is exactly one hundred square inches. This cone or funnel terminates in a tube which carries the water into a receiving vessel. The water which has fallen is measured by pouring it from the gauge into a cylinder, so graduated as to indicate hundredths of inches. A smaller cylinder is also provided, which gives thousandths of inches, and may serve, in cases of accident, as a substitute for the larger cylinder. The rain gauge is placed in a cask sunk in the earth, with its mouth near the level of the ground.

The snow gauge is a cylinder of zinc of the same diameter as the mouth of the rain gauge. The measurement is made by pressing its mouth downwards to the bottom of the snow, where it has fallen on a level surface, then carefully inverting it, retaining the snow, by passing under it a thin plate of metal. The snow is afterwards melted, and the water produced is measured in one of the graduated glass cylinders of the rain gauge.

The wind vane is a thin sheet of metal, (it might be of wood,) about three feet long, carefully balanced by a ball of lead, and attached on the top of a long wooden rod, which descends along the wall of the building to the sill of the window of the observer. It terminates in the centre of a fixed dial plate, and indicates in its movements the direction of the wind by a pointer attached to the rod.

The observer is by this arrangement enabled to determine the course of the wind, by looking down on the dial plate, through the glass of the window, without exposing himself to the storm.

Besides the full sets of instruments furnished by the State of New York, from the appropriation of the Regents of the University, the Smithsonian Institution has furnished a number of sets, to important stations, and in order that they might be more widely disseminated, we have directed Mr. Green to dispose of sets, to individuals, at a reduced price, on condition that they will give us copies of the results of their Observations; the remainder of the cost being paid by this Institution. A number of persons have availed themselves of this privilege.

To accompany the instruments, and for the use of those who take part in the Smithsonian system of meteorological observations, a series of minute directions, prepared by Professor Guyot, has been printed by the Institution. It occupies forty octavo pages, with wood-cut representations of the instruments, and is accompanied by two lithographic engravings, to illustrate the different forms of clouds, and to facilitate their notations in the journals, in accordance with the nomenclature adopted by meteorologists. A set of tables has also been furnished for correcting the barometrical observations, on account of variation of temperature. A set of hygrometrical tables, to be used with the wet and dry bulb thermometers, and a set, for the calculation of heights by the barometer, will be prepared.

We may also mention, in connection with this subject, that a series of preliminary experiments has been made, in the laboratory of this Institution, for the purpose of constructing from direct observation, a scale of boiling temperatures, corresponding to different degrees of rarefaction of the air. With a thermometer, each degree of which occupies one inch in length of the scale, the variations of the boiling point corresponding to a slight change in altitude, are found to be more perceptible than those in the length of the barometrical column.

A series of experiments has also been made, for testing the performance of the Aneroid barometer under extremes of atmospheric pressure. The instrument as usually constructed, has not been found, from these experiments, very reliable, though it may be improved, and thus serve as an indicator of minute atmospheric changes. I think, however, it will not answer for the determination of changes of atmospheric pressure, of considerable magnitude.

For the better comprehension of the relative position of the several places of observation, now embraced in our system of meteorology, an outline map of North America has been constructed, by Prof. Foreman. This map is intended also to be used for presenting the successive phases of the sky over the whole country, at different points of time, as far as reported to us, and we have been waiting for its completion, to commence a series of investigations, with the materials now on hand, relative to the progress of storms.

A valuable collection of returns relative to the Aurora, has been received in accordance with the special instructions which we have issued for the observation of this interesting phenomenon. These are to be placed in the hands of Captain Lefroy, of the Toronto observatory, and incorporated with observations of a similar kind, which he has collected in the British possessions of North America. An account in full of the whole series will be presented by Captain Lefroy, to be published in the Smithsonian Contributions.

The meteorological correspondence is under the charge of Professor Foreman. This is found not only to involve considerable labor in the way of receiving the regular returns and sending the required blanks and directions, but also in relation to the discussion of questions on almost every branch of science propounded to us by the meteorological observers, which we think it our duty in all cases, to treat with respect, and to answer to the best of our knowledge.

RESEARCHES, &c.

Explorations.—The programme of organization contemplates the institution of researches in Natural History, Geology, &c., and, though the state of the funds would permit of little being done in this line, yet we have made a beginning. Besides the assistance rendered to the exploration of the botany of New Mexico, by the purchase of sets of plants from Mr. Wright and Mr. Fendler, as mentioned in my last report, a small sum was appropriated, to defray the cost of transportation of the articles which might be collected by Mr. Thaddeus Culbertson, in the region of the Upper Missouri. This gentleman, a graduate of the institutions at Princeton, had purposed to visit the remote regions above mentioned, for the benefit of his health, and was provided by Professor Baird, with minute directions as to the preservation of specimens and the objects which should particularly engage his attention. His journey was undertaken, and executed, under particularly favorable circumstances for exploration. He was accompanied by his brother, Mr. Alexander Culbertson, for many years connected with the American Fur Company, who was familiar with the whole country, and had himself sent valuable specimens of fossil mammals to the Philadelphia Academy of Natural Sciences.

Mr. Culbertson first visited an interesting locality called the *Mauraises*

Terres or Bad Lands, where his brother had previously found the remains of the fossils sent to the Academy. He afterwards ascended the Missouri, to a point several hundred miles above Fort Union. He returned in August last in renewed health to gladden the hearts of his parents and friends, with the prospect of long life and usefulness, but though he had withstood the privations and exposures of the wilderness, he sank under an attack of a prevalent disease and died after a few weeks illness.

He left a journal of all the important events of his tour, which is thought of sufficient importance to be appended to this report.

For a particular account of the interesting specimens which he procured, many of which are new and undescribed, I must refer to the appended report of Professor Baird. A part of the specimens, those of the fossil remains, have been referred to Dr. Leidy, of Philadelphia, who will present the result of his investigations relative to them, for publication in the third volume of the *Smithsonian Contributions*.

A small appropriation has also been made to defray in part the expense of exploration, relative to the erosions of the surface of the earth, especially by rivers, and also for investigations relative to terraces and ancient sea beaches, under the direction of President Hitchcock. An abstract of these investigations, as far as they have been made, has been received by the Institution, and a full account of the whole, it is expected, will soon be ready for publication.

Also, an exploration for the increase of the *Smithsonian* collection, particularly in fishes and reptiles, of which our knowledge is most imperfect, was undertaken by Professor Baird, accompanied by a number of young gentlemen, his former pupils. The result of this expedition which cost the Institution little more than the price of materials and transportation, was a large number of specimens, including numerous species before unknown to science.

Experiments. — A series of experiments has been made, during the past year, under the direction of Professor Jewett, to test the value of a new plan of stereotyping. If the result of these experiments be favorable, it is proposed to purchase the right to use the invention, for the purposes of the Institution. Should the invention be found to possess the character to which it appears entitled, it will not only be of much importance to the Institution, but to the world; and we shall have done good service to the cause of knowledge, by giving it our countenance and assistance. Professor Jewett has found it especially applicable to the accomplishment of his system of stereotyping catalogues of libraries, by separate titles, and, in this application, it will certainly be of great value, even should it fail in other respects to realize the sanguine expectations of its inventor.

The result of the experiments will be submitted to a commission of persons properly qualified to judge of its merits, and if their report be favorable, a small sum will be allowed for the use of it.

Besides the experiments mentioned under the head of meteorology, made by Mr. Espy, on the cold produced by the rarefaction of air, Dr. Hare, of Philadelphia, is employing articles of apparatus belonging to the Institution, in a series of researches on the phenomena exhibited in the air, and in a vacuum by rubbing silicious minerals against each other. The results of these experiments, with the drawings of the apparatus employed,

will be presented to the Institution in the form of a memoir for the Smithsonian Contributions to Knowledge.

COMPUTATIONS.

Occultations for 1851.—For the purpose of facilitating the accurate determination of geographical points in the United States, a list of occultations and the co-ordinates of reductions for the years 1848, 1849, and 1850, was prepared and published at the expense of the Smithsonian Institution. Congress has since ordered the publication of an American Nautical Almanac, and as lists of occultations will form a part of this ephemeris, Mr. Preston, late Secretary of the Navy, directed that the expense of computing these tables for 1850, should be defrayed from the appropriation for the almanac, provided the printing and distribution were at the expense of the Smithsonian Institution. The same course has been authorised by Mr. Graham, the present Secretary of the Navy.

Copies of these tables computed by John Downes, of Philadelphia, have been sent to all persons known to the Institution, who would probably make use of them in the way of improving our knowledge of the geography of this country. They have been furnished particularly to officers of the United States Army, and other persons engaged in exploring our new possessions and determining their boundaries. All persons, to whom these tables were presented, have been requested to send the result of their observations, made in connection with the use of them, to this Institution, or to publish them in some accessible journal.

Ephemeris of Neptune.—It was stated, in the last report, that the orbit of the planet Neptune, established by the researches of Mr. Walker, and comprised in his memoir published by the Institution, gives the data for calculating an ephemeris or tables of the daily position of this planet, rivaling in precision the tables for any of the older planets. Sets of these tables were computed and published for 1848 and 1849, at the expense of the Smithsonian Institution, but those for 1850 and 1851, have been computed under the direction of Lieutenant Davis, superintendent of the Nautical Almanac, and at the expense of the appropriation under his charge, while the expense of printing the tables has been borne by this Institution.

These tables are corrected for the perturbing influence of the planets Jupiter, Saturn and Uranus, by deductions from mathematical investigations of Professor Peirce, of Harvard University. They have been used in following the motion of Neptune, by all the principal astronomers of the world, and have every where received the highest commendation, reflecting honor on the Institution and on the science of the country.

MUSEUM.

The act of Congress authorizing the establishment of the Smithsonian Institution, contemplates the formation of a Museum of Natural History. It would not, however, be in accordance with the spirit of the organization, to expend the income in the reproduction of collections of objects which are to be found in every museum of the country. Natural History can be much more effectually promoted, by special collections of new objects, by appropriations for original explorations and researches, and above all, by

assistance in the preparation of the necessary drawings, and by presenting to the world, in a proper form, the labors of naturalists. In conformity with these views, it has been resolved to confine the collections, principally, to objects of a special character, or to such as may lead to the discovery of new truths, or which may serve to verify or disprove existing or proposed scientific generalizations. A number of special collections, important in this point of view, are mentioned by Professor Agassiz, in the appendix to my last report, and, for a more enlarged statement relating to the same subject, I would refer attention to the accompanying report by Professor Baird, to whom the charge of the collections of Natural History has been confided.

A considerable number of specimens in mineralogy, geology and botany, had been received, previous to Professor Baird's connection with the Institution, and, since he has entered upon his duty, a large addition has been made to the stock, by the deposit of his own cabinet, and by donations from various sources.

The collection is principally rich in undescribed species of fishes and reptiles, and especial care will be taken, by Professor Baird, to enhance its value, by procuring, in all cases, as far as practicable, such specimens as help to solve questions of scientific interest. The collection has been arranged in one of the rooms of the basement story, so as to be accessible to the student in this branch of science, and has already done service in this way, by furnishing the facts given in one of the memoirs of the Smithsonian Contributions. Though letters are constantly received requesting the Institution to purchase collections of plants, minerals and other objects of natural history, yet we have declined, in all cases, to avail ourselves of opportunities of this kind to increase the cabinet. Experience has, thus far, shown that specimens of all kinds will accumulate, from donations and exchange, as rapidly as they can be accommodated with room, and properly arranged.

I have given, in my last report, the reasons why it is not thought advisable on the part of the Institution, to accept the gift proffered by Congress, of the great Museum of the Exploring Expedition, and I have no reason to change my opinion on that point.

For a detailed account of the specimens forming the Smithsonian collection, I refer to Professor Baird's report, herewith submitted.

AMERICAN ANTIQUITIES.

During the past year, we have received information of the locality of a number of mounds, and other remains of ancient art, in different parts of the United States. A gentleman is now engaged in the examination of the mounds of Western Virginia, with the intention of presenting the results of his labors, for publication in the Smithsonian Contributions to Knowledge.

The survey of the mineral land in the vicinity of Lake Superior, has disclosed the site of an ancient copper mine, whence, in all probability, the copper of the metal ornaments, instruments, &c., found in the mounds was derived. The remains of the implements and of the ore, as left by the ancient miners, are exhibited in place, and afford an interesting illustration of the state of arts among the mound builders. The geological surveyors have promised to make accurate measurements, and drawings of

everything of interest connected with these works, and to present them, with suitable descriptions, to the Institution, for publication.

Mr. E. G. Squier, during his sojourn in Central America, as *Charge d' Affaires* of the United States, made some interesting explorations relative to the antiquities of that country, and has sent to this Institution five large stone idols and several smaller objects, as the beginning of an Ethnological Museum. For the cost of shipment and transportation of the three larger of those idols by way of Cape Horn, the Institution is indebted to the liberality of B. Blanco, Esq., of New York.

For some remarks relative to the importance of forming an Ethnological museum, I beg to refer to a paper by Mr. Squier, given in the appendix to this report.

APPARATUS AND INSTRUMENTS OF RESEARCH.

It is a part of the plan of the Institution, to appropriate a small portion of the funds, to the purchase of sets of instruments of physical research, to be used by the officers of the Institution, and under certain restrictions, by other persons. In accordance with this purpose, I was requested, by the Board of Regents, to procure an astronomical clock, with the electro magnetic registering apparatus, to be lent to Lieutenant Gillis during the continuance of his astronomical labors in Chili. The clock has been imported from Germany, and is now in the hands of the instrument maker, to receive the registering attachments. The whole will be sent to Chili, as soon as the apparatus is completed. I regret that the difficulty of procuring the services of suitable workmen has delayed, so long, the completion of these instruments.

A communication from Lieutenant Gillis, informs us that the Chilian Government has resolved to establish a permanent national observatory at Santiago, and that it will purchase the instruments above mentioned. The Institution will therefore again, as in the case mentioned in a former report, of the purchase of a telescope, for the same expedition, be the means of promoting science, without an expenditure of its income.

The apparatus for determining the elements of terrestrial magnetism, mentioned in my last report, as having been lent to Colonel Emory, has been delivered to Colonel Graham, to be used on the Mexican boundary survey. To replace these, the Institution has received permission to order another set, from London, at the expense of the government, and thus, by an addition to the number of instruments of this kind, the means of promoting the science of terrestrial magnetism, in this country, will be increased.

The purchase of standard meteorological apparatus, and also the instruments which have been distributed to different important stations, throughout the country, is a part of the same plan.

During the past year a considerable portion of the apparatus constituting the liberal donation of Dr. Hare, of Philadelphia, has been repaired and fitted up; and it is hoped, during the present season, to complete the repairs of the remainder, and to place the whole in a proper position for exhibition and use.

LIBRARY.

It has been stated, that the programme of organization is intended to

harmonize the several requisitions of Congress, and the resolutions of the Board of Regents, with a system of active operations, the influence of which shall be as widely extended as practicable. Though almost every one will admit the value of libraries, and the importance of collecting in this country as great a variety of books as possible, yet it may well be doubted whether the accumulation of a large number of books, which are to be found in almost every library of the country, is, in the present state of the funds, to be expected or aimed at. It is believed that a portion of the income devoted to the library, may be more efficiently expended in the promotion of the same ends by other means, and hence, it was resolved to make special collections of books; particularly to procure such as are not in the country, and also, in order to render more available those which are now in our libraries, to prepare, as far as practicable, a general catalogue of all the books they contain.

In accordance with these views, Professor Jewett has devised a plan of facilitating the publication of catalogues of libraries, which bids fair to be of much importance to the literature of the country. This plan has been submitted for examination to a commission of gentlemen well acquainted with the subject, and has received from them a very favorable report recommending its adoption. [*See Appendix.*]

The propositions submitted to the commission for examination, were as follows:

1. A plan for stereotyping catalogues of libraries by separate movable titles; and
2. A set of general rules, to be recommended for adoption, by the different libraries of the United States, in the preparation of their catalogues.

For a full account of Professor Jewett's plan, and of the advantages anticipated from it, I must refer to his report herewith submitted. I may however, briefly allude to the leading principle of the plan, which is to stereotype the titles of books on separate movable blocks. These blocks once prepared, and kept in a central depository, may be used for the printing of new editions of the catalogues for which they were originally made, allowing the interposition of additional titles in the proper order; as well as for the printing of all other catalogues containing the same titles. The collection of the stereotype blocks of the titles of the several libraries, will thus form the stereotyped titles of a general catalogue of all the libraries. They will lend themselves to the construction of bibliographies of particular branches of knowledge, and will admit of being arranged alphabetically, chronologically, or in classes, in accordance with any required system.

These blocks are not to be made in advance of a demand for their use. They are to be gradually accumulated, by an arrangement, which, imposing only a temporary and light burden upon the funds of this Institution, will effect the great public object desired, at the same time that it diminishes to but a fraction of the present cost, the expenses of publishing catalogues, and secures the construction of them upon a uniform and approved system.

The details of a plan so comprehensive, may well be supposed difficult of adjustment, and not capable of being clearly described within the limits of a few paragraphs. These have, however, been fully considered by a competent tribunal, and the plan has received commendation and promises of co-operation, from some of the principal institutions of the country.

During the last year, the library has continued to increase by donation, by receipts under the copy-right law, by exchanges for the publications of the Institution, and by purchase. It now numbers, in all, nearly ten thousand separate articles, and bids fair, from the same sources, to become a very valuable collection.

Though one half of the annual interest is to be expended on the library and the museum, the portion of the income, which can be devoted to the former will, in my opinion, never be sufficient without extraneous aid, to collect and support a miscellaneous library of the first class. Indeed, all the income would scarcely suffice for this purpose. Still, by means of exchanges, donations and purchases, a library of great value may be collected and sustained, and this, with the constantly increasing library of Congress, the libraries of the Departments, and that of Georgetown College, will furnish a collection of books, not unworthy of the capital of this nation.

From the report of Professor Jewett, it will be seen that a Gallery of Art has been commenced, and that it is already in possession of a valuable collection of engravings.

In this connection, I may mention that at the last annual meeting of the board, a letter was presented from the Hon. Abbott Lawrence, informing the Regents that a portrait of Smithson had been offered through him for sale to the Institution. This portrait, which was in the possession of the widow of John Fitall, a servant of Smithson, mentioned in his will, was purchased for thirty guineas, and is now in the Gallery of Art. It represents the founder of this Institution, in the costume of a student of Oxford, and was probably painted when he was not more than twenty years of age. There is, also in possession of the Institution, a medalion of Smithson, in copper, taken in after life. It is from this, that the head on the title page of the Smithsonian publications has been copied.

LECTURES.

During the past session of Congress, a series of popular lectures has been given to the citizens of this place and strangers, in the lecture room of the Smithsonian building. These lectures were delivered by gentlemen distinguished for their standing, and for their attainments in literature and science, who were invited for this purpose. The interest in these lectures has been sustained to a wonderful degree. They have been attended from the first by large audiences, and the results thus far, indicate that considerable good may be derived from the diffusion of knowledge in this way, in a central position like Washington, where persons from every part of the Union are found. Although the lectures appear to the public one of the most prominent objects of the Institution, and although they are attended with much trouble and considerable expense, they really form the least important feature of the plan adopted. So long however, as there is a prospect of doing good by means of them, it is due to the city in which the Institution is located, that they should be continued.

Much complaint has been made on account of the size of the lecture room. It is certainly too small to accommodate all who have wished to attend. We have, however, endeavored, in several instances, to obviate this difficulty, by procuring a repetition of the lectures; but this plan is

attended with additional expense, and cannot, in all cases, be adopted. Should large audiences continue, it may be well to provide a larger lecture room in the main building, and by removing the seats from the present lecture room, convert it into a museum of apparatus. This change, if thought advisable, can be made at very little, if any, additional expense, since the present wood work of the interior of the main building, is to give place to a fire proof structure, which will admit of being arranged as a lecture room. Indeed, the original plan contemplated a room of this kind in the main building, but the arrangement of it was such as to seat scarcely more than the room at present used.

Many enquiries are made as to the publication of these lectures. In some cases, reports of them have been given in the newspapers, and it will be advisable to extend this practice to all: but the publication, in a separate form, of lectures, which in many cases, are not written out, and not intended by their authors, as additions to knowledge, would be attended with much expense, and little useful effect. The institution, in several instances, is doing better service, by publishing, in full, the original researches, on which the lectures are based. The papers of Professor Agassiz, of Professor Harvey, and one of Lieutenant Davis, are of this character, and will be given to the world, through the Smithsonian Contributions.

The following is a list of the Titles of Lectures given before the Institution during the last session of Congress, with the Names of the distinguished Gentlemen by whom they were delivered:

- A single lecture on Holland; by the Rev. Dr. George W. Bethune, of Brooklyn, New York.
- A course of lectures on the relations of Time and Space—the vastness of the Visible Creation—and the Primordial Arrangement of Existing Systems; by Professor Stephen Alexander, of Princeton, New Jersey.
- A course of lectures on Science applied to Agriculture; by Professor J. F. W. Johnston, of the University of Durham, England.
- Two lectures, one on the tendencies of Modern Science, and the other on the Spirit of the Age; by the Rt. Rev. Bishop Alonzo Potter, of Pennsylvania.
- One lecture on the Ability of the Individual to Promote Knowledge; by the Rev. John Hall, of Trenton, New Jersey.
- A course of lectures on the Unity of the plan of the Animal Creation; by Professor Louis Agassiz, of Cambridge, Massachusetts.
- A course of lectures on the Tides of the Ocean and their Geological Relations; by Lieutenant Charles Henry Davis, of the United States Navy.
- A course of lectures on Marine Algæ or Sea Weeds, and also on the Morphology of the Vegetable Kingdom; by Professor William H. Harvey, of the University of Dublin, Ireland.
- Two lectures, one on the Origin and Growth of the Union during the

Colonial Period, and the other on some points of the History and Peculiarities of the English Language; by Professor Henry Reed, of the University of Pennsylvania.

A course of lectures on the Chemical Operations of Nature; by Professor Lewis C. Beck, of Rutgers College, New Jersey.

The first part of a general course, giving an exposition of the Dynamical Phenomena of Geology; by Professor Henry D. Rogers, of Boston.

Whatever may have been the effect of these lectures in the way of Diffusing Knowledge, it is evident from the character of the men by whom they were delivered, that they presented truths intended to elevate and improve the morals and intellectual condition of the hearers.

All of which is respectfully submitted,
 JOSEPH HENRY, *Secretary*
Of the Smithsonian Institution.

REPORT OF THE ASSISTANT SECRETARY IN CHARGE OF THE LIBRARY OF THE SMITHSONIAN INSTITUTION, FOR THE YEAR 1850.

To the Secretary of the Smithsonian Institution :

SIR:—With the close of the year, it again becomes my duty to present to you my annual report upon the affairs of the Library.

The rate of increase is still slow. We cannot expect it to be rapid, until after the appropriation of the full income of the Institution to its permanent objects.

The following table exhibits the number of books and other articles added to the Library since my last report, with the sources from which they have been received.

	Books.	Pamphlets.	Engravings.	Maps and Charts.	Pieces of Music.	Other Articles.	Totals.
Purchases, - - - - -	502	9		2			513
Donations and Exchanges, - - -	470	624	1	3			1,098
Copyrights, - - - - -	452	35	8	12	455	24	986
	1,424	668	9	17	455	24	2,597

Adding these to the numbers previously reported, we obtain the following statement of the present size of the collections.

	Books.	Pamphlets.	Engravings.	Maps.	Music.	Drawings.	Other Articles.	Totals.
Purchases, - - - - -	2,818	34	1,335	2				4,189
Donations, - - - - -	627	1,319	48	27		30		2,051
Copyrights, - - - - -	1,339	70	9	32	561		46	2,057
Deposits, - - - - -	873							873
	5,657	1,423	1,392	61	561	30	46	9,170

These numbers are, it is true, small in comparison with the demands of the community, and with our own hopes and prospects. But it must be borne in mind that the Institution is as yet in but partial operation; that the funds are still, in a great degree, devoted to the building; and that the systematic collection of a Library has hardly been commenced.

The books which have been bought, are for the most part such as were of immediate necessity. The lists which accompany this report, in connection with those previously transmitted, will show the composition of the Library. Though not complete in any department, this collection possesses from the outset, a decided and peculiar character. The list of books received by donation and exchange contains the titles of the latest publications of many of the learned societies of Europe, with complete

sets of some of them. It will be an object of the first care, to complete this department. The use which has already been made of those which we possess, and the frequent calls for others, fully demonstrate that the plan of collecting here entire series of the transactions of all foreign academies, and of the ablest scientific journals of every nation, was wisely formed to meet a real and wide-felt want.

The collection of engravings and works upon the history of art, has attracted much interest; not from indiscriminating idlers, but from men of taste, and particularly from artists. This collection, though not the largest in the country, is believed to be the choicest. It was made by an American gentleman, distinguished as a scholar no less than as a statesman, with the special design of illustrating the progress and resources of the art of engraving in all its branches, from its early masters to the present time. It was the work of many years to gather specimens, so rare and beautiful. It required an educated eye, a cultivated taste, an earnest study of the history of art, much diligent search, and the aid of many friends and correspondents, to bring together so many of the most valuable prints which have ever been executed. The acquisition of this collection has saved to the Institution all expenditure, either of time or money, for skill and labor thus bestowed. The saving of money cannot but seem important to any one who weighs our means against our wants, and the gain in time gives a longer period of public benefits.

This collection contains some of the best works of nearly every engraver of much celebrity. There is one portfolio of the works of Albert Durer, containing twenty engravings on copper and two on iron, by his own hand,—and among them, most of his best and rarest works; about sixty fine copies on copper, including the famous seventeen by Marc Antonio; thirteen different portraits of Durer, and a large number of wood cuts engraved by him or under his inspection. Another portfolio contains a large collection of the etchings of Rembrandt, including some of his most beautiful pieces, particularly the “Christ Healing the Sick,” an early and fine impression. There is a portfolio of two hundred engravings and etchings, by Claude Lorraine, Hollar, and Bega; a portfolio of superb portraits by Nanteuil, Wille, Edelinck, and others, among them, a first impression of the “Louis XIV in armor,” by Nanteuil; a portfolio of prints from the old Italian masters, comprising many that are extremely rare; and another from the old German masters, containing about one hundred prints, many of them scarce and of great beauty. There are besides, five portfolios of sheet engravings, including very choice prints. Among them are thirty-one which are valued by Longhi, at fifteen hundred dollars.

Among the galleries and published collections, are the “Musée Royal,” in two volumes folio, proofs before the letter, a superb copy; Denon’s “Monumens des Arts du Dessin,” in four volumes folio, of which only two hundred and fifty copies were published; Baillie’s Works, one hundred plates, folio; Thorwaldsen’s Works, four volumes, folio; Hogarth’s Works, folio, and the German edition in quarto; The Boydell Gallery, two volumes, folio; Boydell’s “Shakspeare Gallery,” a remarkably good copy, containing many proofs before the letter, numerous etchings and several progressive plates; Claude’s “Liber Veritatis,” an original copy, three volumes, folio; The Houghton Gallery, two volumes, folio; Chamberlain’s Drawings in the Royal Collection, one volume, folio; Rem-

brandt's Drawings, one volume, quarto; Da Vinci's Drawings, one volume, quarto; "Galerie de Florence;" Angerstein Gallery; Ancient Sculpture, by the Dilettanti Society; Perrault's "Hommes Illustres;" Sadeler's Hermits; "Theuerdank," a fine copy of the very rare edition of 1519; Meyrick's Armour; Hope's Ancient Costumes, and more than one hundred volumes besides, mostly in folio or quarto, either composed entirely of valuable engravings, or in which the text is published for the sake of the illustrations of fine or decorative art.

The collection of critical and historical works, in the various departments of the fine arts, comprises about three hundred volumes of the best works in the English, French, German and Italian languages, including whatever is most needed by the student of art in all its branches.

Engraving seems to be the only branch of the fine arts, which we can, for the present, cultivate. One good picture or statue would cost more than a large collection of prints. The formation of a gallery of the best paintings, is, in this country, almost hopeless. Engravings furnish us with translations, authentic and masterly, of the best creations of genius in painting and sculpture, the originals of which are utterly beyond our reach. Engraving, too, is more than a mere imitative art. The master's genius shines forth from some of the free and graceful etchings of Rembrandt almost as vividly as from his canvas.

It can hardly be doubted, that, in no way, could this Institution, for the present, do so much for every department of the fine arts, without injury to other objects of its care, as by procuring a collection of engravings, so full and so well chosen as that which now adorns its Library.

Another department of the Library which has received special attention, is that of bibliographical works. I need not here repeat what I have already said upon the importance of these books. A librarian can no more do without them, than a mechanic can work without tools, or a chemist perform experiments without apparatus. Our collection of them is already very respectable; nor have the books been without great use since they were placed upon our shelves. The announcement, early made, that we proposed to form such a collection, not solely for our own use, but also for the benefit of other Libraries, has been read and noted. Applications from all parts of the country are now made for information and assistance, which these books enable us to give.

The books which we have received under the copyright section of our charter, form a popular portion of the Library. Among them are works of great value and importance. The Law books, alone, are worth more than five hundred dollars. The Medical books are of considerable value. Many interesting works of local history, thus find their way to our shelves, which we should otherwise not be likely to be acquainted with. The works of fiction, poems, critical essays, and even the school books, have, in this Library, a worth beyond their intrinsic or exchangeable value, as specimens to be handed down to posterity of the literary characteristics of this generation. The list of periodical publications is intended to include the best journals of literature, science and art, in all languages.

It is perhaps, too soon to begin to speak of the use made of the Library. It is not ten months, since the books, few as they are, were first arranged in the western wing of the Smithsonian building; and the adjoining "connecting range," fitted up for a reading room. Yet this time has been long enough to show the great interest which attaches to such an estab-

lishment, and to give an earnest of its future usefulness. A record of visitors, kept in the reading room, shows an average of sixteen thousand a year. A large proportion of these are, it is true, attracted merely by curiosity. Yet many are led by a love of study. However much we must regret that we have not yet the means of meeting the wants of students, it is encouraging to see the evidence, that all which we can do will be appreciated and rendered useful.

The experience of the last year would seem to decide the question of the appropriateness of this location for such an Institution. An establishment like this must have a fixed position somewhere. Yet its benefits are for all; not for one city nor one section of country, nor one nation even, but for "MANKIND". It is not to be denied, that a large city, like New York, or Philadelphia, or Boston, offers many advantages for the operations of such an Institution, not possessed by this city. It is, nevertheless, almost beyond question, that the comparison of advantages is in favor of this very place. There is no spot which presents so many attractions for the class of men most immediately interested in its concerns; no city, which they more gladly visit. The high officers of state, and the foreign diplomatic corps reside here. Here are held the sessions of Congress. Here are the executive departments of the government, the Patent Office, the Office of the Coast Survey and the Observatory. Every man, throughout the whole extent of the land, feels that here he has a friend,—a representative,—through whom he may communicate with such an establishment, when he cannot visit it in person. The facilities for the kind of intercourse, which we need with other countries, are, by the help of the State Department and of Foreign Ministers, greater than at any other point. More than all, the establishment here possesses a character of nationality, which would not elsewhere attach to its movements, in the eyes of our own people and of foreigners. This it was, undoubtedly, which led its founder to direct that the Institution should be established in Washington. Besides all this, it is enabled to multiply its influence and usefulness, by acting in concert with the departments of the National Government.

The inhabitants of a city where such an institution is established must, of necessity, share more largely in its benefits than others more remote. It is gratifying to know that this advantage could fall nowhere more appropriately, more benignly, or less invidiously, than upon this city. Selected and planned as for the seat of government of a mighty empire—a spot where nature laid her hand most gracefully—Washington has not hitherto been able, like her sister cities, to gather from commerce, wealth for endowments of learning. From the nature of our political institutions, she has been deprived, too, of that fostering munificence, which in Europe has reared splendid capitals from the sandy plain, or sunken morass, and supplied them not only with all that can meet the convenience and gratify the taste of their inhabitants, but also with Universities, Scientific Societies, and Libraries, for the advancement of civilization, refinement, and human happiness.

The central position and national character of the institution, have suggested many ways of rendering the Smithsonian Library useful to the literary public other than in the collection of books. These are not of course supposed to dispense with the importance of collections, nor do those which we have thus far adopted materially diminish our means of accu-

mulation. They are additional objects of attention and they neither exclude nor interfere with the principal object. During the first years of the Library, while the money is wanting for extensive purchases, these plans receive a larger *relative* share of attention than may permanently be given to them; though it is hoped that they will actually continue to increase in extent as in importance.

One of these means of usefulness, was the gathering of statistical and historical notices of public libraries in the United States. This occupied a portion of my time during the year 1849. The results of my labors were presented in the appendix to my last report, which has not yet been printed. In establishing a central bibliographical bureau, it was of primary importance to survey the field in order to learn the number, condition, and prospects of existing libraries, and to establish with them, relations indispensable to success in any general system of operations.

GENERAL CATALOGUE.

The formation of the General Catalogue of American Libraries has been another prominent object of my attention. As most of our public libraries possess printed catalogues, it is possible to form one central catalogue, by combining the titles of these, in one alphabetical arrangement. The value of such a work would be, in a measure, limited to this spot. The only way in which it could be extended further, would be by correspondence. Even thus limited, the scheme is very promising. It is manifest, however, that its benefits would be vastly increased, if copies of the catalogue could be multiplied. The catalogues of the different libraries were, however, constructed on plans so various, and in most cases, so faulty, that it was unadvisable to print any catalogue formed from them.

In order to realize from a general catalogue all of the vast advantages which it seems to promise, it is necessary that the catalogues of all the libraries of which it is composed, should be prepared with uniformity and accuracy; and in order to secure the co-operation necessary to the construction of catalogues in this manner, some plan must be devised, which would not increase, but if possible, diminish the present cost to each library of making and printing its catalogue.

I had the honor, sometime since, to present, through yourself to the Board of Regents, the outline of a plan which promises to secure these ends and others of not less importance. This plan was referred to a commission of librarians and literary men of the highest standing, for their examination.

The favorable report of this commission, after the laborious and conscientious attention which they gave the matter, leads me to hope, that the project will be carried immediately and vigorously into execution.

It would not be possible for me, within the customary limits of a report like this to present all the details of a scheme so extensive; yet it is proper that I should dwell somewhat at length upon the exigencies in which it originated; its principal features; its practicability; and the benefits which it promises to our public libraries and to the cause of knowledge.

We can but glance at the nature and extent of the difficulties, which have hitherto been encountered, in attempting to furnish suitable printed catalogues of growing libraries, and which have led, or are leading, to

a common abandonment of the hope of affording guides so important to the literary accumulations of the larger libraries of Europe.

It is, of course, entirely practicable to publish a complete and satisfactory catalogue of a library which is stationary. But most public libraries are constantly and rapidly increasing. This circumstance, so gratifying on every other account, is the cause of the difficulties to which I have alluded.

While the catalogue of such a collection is passing through the press, new books are received, the titles of which, it is impossible, in the ordinary manner of printing, to incorporate with the body of the work. Recourse must then be had to a supplement. In no other way, can the acquisitions of the library be made known to the public. If, as in the library of Congress, the number of supplements be increased to nine, the student may be obliged to grope his weary way through ten catalogues, instead of one, in order to ascertain whether any book which he seeks is in the library. He cannot be certain, even then, that the book is not in the collection, for it may have been received since the last appendix was printed. Supplements soon become intolerable. The whole catalogue must then be rearranged and re-printed. The expense of this process may be borne, so long as the library is small; but it soon becomes burdensome, and ere long insupportable, even to national establishments.

There is one course left—not to print at all. To this no scholar consents, except from necessity.

But to this alternative, grievous as it is, nearly all the large libraries of Europe have been reluctantly driven. More than a century has passed since the printing of the catalogue of the Royal Library at Paris was commenced. It is not yet finished. No one feels in it the interest which he would, if he could hope to have it kept up complete, if once it were brought up to a given date.

Dr. Pertz, Chief Librarian of the Royal Library of Berlin, declares that to print the catalogue of a large library, which is constantly increasing, is to throw away money. His opinion is founded upon the supposed impossibility of keeping up the catalogue, so as continually to represent the actual possessions of the library.

The first volume of the new catalogue of printed books in the British Museum was published in 1840. It is a folio of four hundred and fifty-seven pages, and contains all the titles, under the letter A, of books in the library at the end of the year 1838. Mr. Panizzi, from the first, strongly opposed the printing of any part of the catalogue, before the whole, up to the prescribed limit (1838,) should be completed in manuscript. Time has shown the justness of his views. The commissioners lately appointed by the Queen to inquire into the constitution and management of the Museum, have, in their report, expressed an opinion decidedly against the printing of the catalogue at all, and principally on the ground that it must ever remain imperfect.

One of the witnesses, (the Right Honorable J. W. Croker,) examined before the commissioners, thus strongly states the case with respect to printing:

“You receive, I suppose, into your library every year some twenty thousand volumes, or something like that. Why, if you had a printed catalogue dropped down from Heaven to you at this moment perfect, this day twelve-month your twenty thousand interlineations would spoil the

simplicity of that catalogue; again the next year twenty thousand more; and the next year twenty thousand more; so that at the end of four or five years, you would have your catalogue just in the condition that your new catalogue is now (the manuscript part greater than the printed part.) With that new catalogue before your eyes, I am astonished there should be any discussion about it, for there is the experiment; the experiment has been made and failed."

Not one European library of the first class, has a complete printed catalogue in a single work. The Bodleian library issued, in 1843, a catalogue in three large volumes folio, which is generally but erroneously supposed to contain the titles of all books in the collection; but all books of which special catalogues had previously been published, are omitted in it. For a complete catalogue of the Bodleian library, it is necessary to procure, not only the three volumes folio printed in 1843, but also four other volumes, containing the catalogues of collections belonging to the library. Therefore, one may be obliged to search five catalogues, before he can ascertain whether any particular book were in that library up to the end of the year 1834.

The catalogue of 1843 is only brought down to 1835. None, therefore, of the literature of the last fifteen years, and none of the acquisitions of the library during that period, are contained in it. A supplement is in press, or perhaps already published, which contains the additions to the library from 1835 to 1847. When this is published, it will be possible to ascertain whether any given book was or was not in the library at the close of the year 1847; but it may be necessary to search six catalogues for the purpose.

In view of these facts, it is not surprising that the commissioners upon the British Museum should come to the opinion, that it is unwise to print the catalogue of that library, and should advise that nothing more be attempted than to prepare and keep up a manuscript catalogue.

But, in this opinion the English public, who look to the end without considering the difficulties of the way, do not seem cordially to acquiesce; and it will perhaps be found necessary to print, even at the estimated cost of £40,000 sterling, and with the certainty that, almost as soon as the catalogue comes from the press, the re-publication of it will be as loudly demanded.

This is surely, a disheartening state of things. It applies with equal force to catalogues of all forms: alphabetical, chronological, and classed. It has been felt and lamented by every one who has had the care of an increasing library.

In seeking a remedy for this evil, the idea occurred to me several years ago, to *stereotype the titles separately*, and to preserve the plates or blocks in alphabetical order of the titles; so as to be able readily to insert additional titles in their proper places, and then to reprint the whole catalogue. By these means, the chief cost of re-publication—that of composition, together with the trouble of revision and correction of the press, would, except for the new titles, be avoided. The great difficulty which had so long oppressed and discouraged librarians, and involved libraries in expenses so enormous, would thus be overcome.

This idea which had occurred to me before my appointment as librarian of the Smithsonian Institution, assumed, in my mind, new importance in

connection with the plan of forming a general catalogue of American libraries.

My action in the matter was checked by the discouraging opinions of several stereotypers, whom I consulted. I did not indeed believe the difficulties, which they suggested, to be insuperable; but I was so situated that it was impossible for me at once, to institute the experiments necessary to show the practicability of stereotyping titles separately.

In the meantime the librarian and directors of the American Antiquarian society, having heard of the plan, opened a correspondence with me on the subject, with a view of employing it in the republication of their own catalogue. The energetic aid and ingenious suggestions of one of the directors, the Rev. Edward E. Hale, of Worcester, gave a new impulse to the scheme, and induced me to propose its adoption by the Smithsonian Institution sooner than I had anticipated.

The suggestions of Mr. Hale were seconded by the practical skill of Mr. Wilcox, an ingenious electrotypist of Boston, who made the electrotyped page of separate movable titles, which I have already submitted to your inspection. It is a beautiful piece of work. It demonstrated to the conviction of the most incredulous, the practicability of this method of printing catalogues.

After the plan had been made public by a paper, which I presented in August last, to the American Association for the Advancement of Science, Mr. John K. Rogers, agent of the Boston type and stereotype foundry, devised a method of accomplishing the purpose by means of the common process of stereotyping. He caused a page to be made for exhibition at the Mechanics' fair in Boston. He has since been at the expense of another page, very handsomely executed and with several improvements, which I have now the pleasure of submitting to your examination. This page establishes the applicability of the common stereotype process to our purpose. The company which Mr. Rogers represents, is ready to enter into a contract to do the work, at a very small advance upon the usual price of stereotyping. Whatever the result may be, our thanks are due to Mr. Rogers for his intelligent and liberal efforts.

Meanwhile my attention was directed to a new process of stereotyping, which promises to form an era in the art. A gentleman from Indiana, Mr. Josiah Warren is the inventor. The material which he uses for stereotyping costs not more than three cents an octavo page. The process is so simple, that any man of average ingenuity could learn to practice it successfully by two or three days instruction. The cost of apparatus for carrying on the work is very small. The rapidity of execution is such, that one man can produce at least twenty-five octavo pages a day, all finished and ready for use. The plates give a beautiful impression. They seem as durable as common stereotype plates, and so far as now known, they are not in any great degree more liable to injury.

If this invention bears successfully the severe tests of practical men, it will have been brought forward at a most favorable period for this project. It will be seen, by the specimens which I herewith present, that it offers extraordinary facilities for the kind of work which we require, and it will reduce the expense very greatly.

This preliminary point of the practicability of stereotyping by titles, may therefore be considered as established. That it can be done by the electrotype process, as well as by the ordinary mode of stereotyping, is

placed beyond dispute. It seems equally certain that it can be done by Mr. Warren's method. The choice among these three ways must be determined by their comparative economy, convenience, and elegance. We have not yet had the opportunity to bring this point to a final decision. It is certain, however, that the work can be done. I proceed, therefore, to state the proposed *manner of applying* this plan to the printing of catalogues of particular libraries, and to the formation of a general catalogue of all the libraries in this country. It is as follows:

1. The Smithsonian Institution to publish Rules for the preparation of Catalogues.
2. To request other Institutions intending to publish catalogues of their books to prepare them according to these rules, with a view to their being stereotyped under the direction of the Smithsonian Institution.
3. The Smithsonian Institution to pay the whole *extra* expense of stereotyping, or such part thereof as may be agreed on,
4. The stereotyped titles to remain the property of the Smithsonian Institution.
5. Every Library uniting in this plan, to have the right of using all the titles in the possession of the Institution, as often as desired for the printing of its own catalogue; by the Smithsonian Institution paying only the expense of making up the pages, of the press work, and of distributing, the titles to their proper places.
6. The Smithsonian Institution to publish, as soon as possible, and at stated intervals, General Catalogues of all Libraries coming into this system.

It is believed there is nothing impracticable in any part of this plan, provided that the benefits to be derived from it, be such as to secure the co-operation of the various libraries in the country. To these benefits, therefore, it is necessary to direct particular attention.

And first, let us consider its advantages in an *economical* point of view to the first institution adopting it.

We will suppose, for example, that the American Antiquarian Society proposes to publish a new catalogue of its library. This institution printed, in 1837, a handsome and valuable catalogue, in five hundred and sixty two large 8vo. pages, in fine type. The composition cost, we will suppose, one dollar a page. This must all now be reprinted, in order to add the titles of books received since 1837, the number of which is almost equal to that of the former catalogue. If a new catalogue be now printed, in ten or twelve years it will be necessary to reprint the whole, and this process will go on, till the expense of reprinting will be quite appalling. Now had the titles of the original catalogue been stereotyped, the catalogue, instead of costing for the composition 500 dollars, might have cost, for composition and stereotyping, 750 dollars, counting the extra cost of stereotyping in titles 50 per cent. above that of the composition.*

But the necessity of re-composing the first part would no longer exist. Five hundred dollars would therefore be saved in the first reprint, whilst the extra expense of stereotyping was only two hundred and fifty dollars. Thus the net gain would be two hundred and fifty dollars, minus the cost of newly making up and imposing the old matter, which would be very inconsiderable. But there would be still further gains. It would not be thought necessary to print so large editions, if the work could be reproduced at a trifling expense. The re-arrangement, too, passes from the

* I am unable to state what would be the exact cost of stereotyping or electrotyping by titles. I assume 50 per cent. extra, as a convenient rate for calculation, though if Mr. Warren's plan succeed, it can be done for much less.

hands of the librarian to those of the printer; and the proof-reading has been done, once for all.

The time for applying this system to the first edition is indeed past, but the same reasoning, at the present moment, applies to the second. If the whole be now stereotyped, and two hundred copies struck off, the accessions for the first year may be stereotyped and printed separately, and in the second or third year, a new catalogue may be issued, with the additions incorporated. In the mean time, it is probable, that many of the supplementary titles would have been stereotyped for other libraries, and, thus, the cost of writing them out and of stereotyping them, be spared to the Antiquarian Society. If the cost of composition for the catalogue about to be published (containing thirty thousand titles or more,) be stated at one thousand dollars, for an additional sum of five hundred dollars the necessity of recomposing would be forever obviated, and the great advantage secured of being able to print every two or three years, at small expense, new editions, each complete to the time of its publication.

It is thus, I think, demonstrable, that even for the use of a single library, this plan would be economical.

Let us next consider the advantages which the second Library, adopting the plan, may hope from it, in an economical point of view.

We will suppose, for the sake of example, that after the catalogue of the Antiquarian Society's Library has been stereotyped, and the titles placed under the care of the Smithsonian Institution, it is proposed to issue a new edition of the catalogue of the Library of Congress. What inducements would there be for adopting this plan?

It has been the practice in this Library to print a new edition of the catalogue every ten years, and to issue annual supplements. About one-fifth of the catalogue has been printed five times; two-fifths four times, &c. Now, from what has already been said, it will be manifest how great the saving would have been had this plan been known and followed from the first, even if the first cost of stereotyping by titles had been twice or three times that of ordinary printing; and consequently how great the prospective advantage of adopting the plan, even independently of any general system.

But I now suppose that, when the plan is adopted for the Library of Congress, the catalogue of the Antiquarian Library has already been stereotyped, and that the titles are in possession of the Smithsonian Institution, for the use of other libraries entering into the general arrangement. Here is a new and very important element in the calculation.

We suppose the number of titles of the Antiquarian Library, already stereotyped, to be thirty thousand. Some of these would doubtless be the same in both collections. For all that are common to the two, the expense of the *preparation* of titles, of *composition* and of *revision* would be saved to the Library of Congress. It is impossible to say, with exactness, how much the saving would be from these sources, because these two catalogues are not uniform nor complete. If the Library of Congress were properly catalogued, it would give perhaps seventy thousand titles. Of these I presume not less than fifteen thousand would be identical with the same number of the Antiquarian Library. At this rate, more than one-fifth of the labor and cost of preparation would be saved by the use of titles prepared and stereotyped by others, over and above the savings already enumerated.

After the stereotyping of the Antiquarian Library, and the Library of Congress, we should have perhaps eighty-five thousand stereotyped titles. Of course the third institution adopting the plan would be likely to find a very large number of its titles identical with those already stereotyped. The amount saved by the use of titles already stereotyped would soon, (perhaps in the third Library) be sufficient to counterbalance the extra expenditure for stereotyping for that Library. At any rate, the extra expense would be a quantity constantly and rapidly diminishing, and it would soon (certainly after the fourth or fifth large Library) vanish entirely. The Smithsonian Institution would not therefore be required to assume the charge of an enterprise which might involve it in great and increasing expense, but rather, and solely, to help put in operation, and to guide a system which will almost immediately pay its own way, and will soon save enormous sums of money to our public libraries.

That the *aggregate economy* of this plan would be very great, may be seen from the following statement :

We have in our library fifteen thousand pages, mostly in octavo, of catalogues of public libraries in the United States. These contain at least four hundred and fifty thousand titles. But according to the best estimate which I can make from a comparison of these catalogues, there are among them, not more than one hundred and fifty thousand *different* titles. Two-thirds then of the whole cost of printing the catalogues the first time, might have been saved by assuming the extra expense of stereotyping the remaining third.

I have put thus prominently forward the economy to be expected from the proposed enterprise, not because this, in my estimation, is the most powerful argument in favor of it; nor because I should entirely despair of its adoption were it not advantageous in a pecuniary point of view; but because, even if there were no other reasons for it, (provided there were none against it,) the fact of its great economy would be decisive; and because in the present poverty of our institutions of learning, and in the vast number of plans for the extension of their usefulness, which present themselves for consideration, and claim approval, this might stand a much smaller chance of success if it rested entirely upon other grounds than the saving of money.

Having now, however, shown its economy when employed by a single Library, and its great economy in connection with a general system, I proceed to suggest a few, among the many benefits to the cause of Knowledge, which this plan promises, if generally adopted.

It can hardly be necessary for me to dwell at length upon the benefits to be expected from a general printed catalogue of all books in the public Libraries of America. By means of it, every student in America would have the means of knowing the full extent of his resources for investigation. The places where the book could be found, would be indicated in the catalogue. A correspondence would be kept up between this Institution and every other library in the country. A system of exchange and of general loans might, with certain stringent conditions, be established, so that all the literary treasures of the country would be measurably accessible to every scholar. When the loan of a book would be impossible, extracts could be copied, quotations verified, and researches made, through the intervention of this Institution, which would in many cases be nearly as valuable to the student as the personal examination of the book.

In connection with this topic I would add: By law, a copy of every book for which a copyright shall be secured in this country is required to be delivered to the Smithsonian Institution, and to be preserved therein. It is hoped that additional legislation on this subject, will, while it lightens the burdens of publishers, secure the observance of this law, with respect to the Smithsonian Institution, *in all cases*. If then, the books thus obtained be all preserved, they will constitute the complete monumental history of American literature, during the existence of the law. It is useless to enlarge upon the value of such a collection.

If, now, a list of these publications, as they come into the library, should month by month be published in the proposed *Bulletin*, and the titles immediately stereotyped, the expense would be trifling of publishing every year a catalogue of the books copyrighted in America during the year, and to print every five years, a general catalogue of American publications up to that limit. Thus, the monthly bulletins, the annual lists, and the quinquennial catalogues would furnish full and satisfactory records of American publications.

Again, this general catalogue would enable purchasers of books for public libraries, to consult, judiciously, for the wants of the country. So poor are we in the books which scholars need; so long, at best, must we remain in a condition of provincial dependence in literary matters; that a responsibility to the whole country rests upon the man who selects the books for any public library.

Another important benefit of this system is that it allows us to vary the form of the catalogue, at will, from the alphabetical to the classed, and to modify the classification as we please. The titles, separately stereotyped, may change their order at command. If, for example, it were required to print a separate list of all books in the country on the subject of *meteorology*, it would be necessary merely to check off in the general catalogue the titles to be used, and to hand it to the printer to do the rest of the work.

Another great benefit of this project would be to secure *uniformity* in catalogues. A good degree of uniformity would be absolutely indispensable to the success of the plan. Entire uniformity is not indeed to be expected. Perfection is not an attribute of the works of man. But a much higher degree of uniformity would result from this plan, than could otherwise be hoped for. The rules for cataloguing must be stringent, and should meet as far as possible all difficulties of detail. Nothing, so far as can be avoided, should be left to the individual taste or judgment of the cataloguer. He should be a man of sufficient learning, accuracy and fidelity, to apply the rules. In cases of doubt, reference should be made to the central establishment to which the whole work should be submitted, page by page, for examination and revision. Thus we should have all our catalogues formed substantially on one plan. Now, even if the plan adopted were that of the worst of our catalogues, if all were on the same plan, this uniformity would render catalogues, thus made, far more useful than the present chaos of irregularities. But we hope that the best possible system may be adopted.

Another general consideration is that this project looks towards the accomplishment of that cherished dream of scholars, a *universal catalogue*. If the system should be successful in this country, it may eventually be so in every country of Europe. When all shall have adopted and carried

out the plan, each for itself, the aggregate of the general catalogues thus formed — few in number — will embrace the whole body of literature extant, and from them, it will be no impossible task to digest and publish a universal bibliography. How much this would promote the progress of knowledge by showing, more distinctly, what has been attempted and accomplished, and what yet remains to be achieved, and by thus directing the outlay of intellect aright; how much, by rebuking the rashness which rushes into authorship, ignorant of what others have written, and adding to the mass of books without adding to the sum of knowledge; how much by giving confidence to the true and heroic student, who fears no labor so that it bring him to the commanding height at which he aims — the summit of learning in the branch to which he devotes himself; how much such a work would, in these and other ways, promote the great object we have in view, is well deserving the attention of every thoughtful mind. Upon it I may not at present longer dwell.

In America alone can this system be put into immediate operation. In every large country in Europe the arrears in cataloguing, or the mass of titles accumulated in the libraries, would render the first expenses of the enterprise quite startling. But here all things conspire in our favor — our libraries are all small, and mostly repetitions one of another. But they are prosperous and will rapidly increase. Their supporters are all desirous of having printed catalogues. A central administration is necessary. This can be accepted by the Smithsonian Institution, whose position is peculiarly favorable, and whose funds are consecrated to such purposes. The enterprise requires no great outlay of money, no gigantic effort. It may go noiselessly, but rapidly into operation. There is nothing to prevent its immediate usefulness.

The commissioners appointed to examine and report upon the project, considered not only its general features, but also its minute details. To them were submitted the rules proposed for cataloguing, which were separately discussed, and after having been variously amended and modified, were recommended for adoption. It is not supposed that this code provides for every case that will occur. The peculiarities of books are, like the idiosyncracies of authors, innumerable. They baffle the best efforts at classification, except under general heads. The most elaborately formed laws for recording their titles would be inadequate to provide for entire uniformity or consistency. Doubts and difficulties would inevitably arise as to the application of the laws. These must, to prevent varying decisions, be submitted to one person. Hence it is important that the first part of the work, which will furnish examples for the rest, should be done under the immediate eye of the superintendent.

Easy as the operation may seem, to those who have never attempted it, there is no species of literary labor so difficult, or that requires knowledge so extensive and various, as the cataloguing of a large library. It demands peculiar qualifications of patience and accuracy, and a special education — a professional training. Even those most expert must work slowly, if they would avoid mistakes. It is therefore a great consideration that, on this plan, each title, once prepared, is prepared for all the libraries in which the book occurs; whereas, on any other, time and thought and labor are repeated for every copy of the book.

From the favor with which the plan has been met, it can hardly be doubted that it will receive the hearty and vigorous co-operation of all the libraries

in the country. Several are ready to begin upon their catalogues at once. For the reasons already stated, however, it is desirable to begin here. At first the work cannot proceed rapidly. After the accumulation of a considerable number of titles, progress will be much accelerated.

Great as this enterprise is, it will not require the outlay of much money on the part of the Smithsonian Institution to put it in operation, which being once done, it will take care of itself. It will not be a constant drain upon our funds; but on the contrary, it will ere long far more than repay in the facilities for making our own catalogues, all that may at first be expended upon it.

Respectfully submitted,

CHARLES C. JEWETT.

DECEMBER 31, 1850.

REPORT OF THE ASSISTANT SECRETARY

IN CHARGE OF THE NATURAL HISTORY DEPARTMENT, FOR THE YEAR 1850.

TO JOSEPH HENRY, LL. D.,

Secretary of the Smithsonian Institution.

SIR:—I beg leave to present to you a report of operations up to January 1, 1851, in the Department of Natural History assigned to my charge.

I commence with a list of the most important specimens of Natural History received at the Smithsonian Institution, prior to January 1, 1851. The dates of reception have not been given, owing to the fact, that most had arrived before July 1, 1850, the period when my official connection with the Institution commenced. More detailed accounts of these objects will hereafter be furnished, as well as of those which may in future be received.

List of the Principal Accessions to the Museum of the Smithsonian Institution, made prior to January 1, 1851.

Lieut. LYNCH, U. S. N.; Sealed bottles containing Water from the Dead Sea—Cones of the Cedar of Lebanon.

Miss D. L. DIX; Box of Minerals from North Carolina

Dr. F. B. HOUGH; Box of Minerals and Fossils from St. Lawrence county, New York.

Mr. GUEST; Box of Minerals from same locality.

Mr. POLKINHORN; Box of Tertiary fossils from North Carolina.

Dr. JAMES EIGHTS, Albany, New York; Box of Sands, Clays and Concretions from the vicinity of the city of Albany, New York.

Dr. WILLIAM B. SMITH, Indiana; Silurian fossils from Indiana.

WILLIAM PHILLIPS, Esq., Augusta, Georgia; Box of Minerals from Georgia.

OSCAR FREEMAN and GILBERT TAYLOR, Civil Engineers; Very large specimens of Crystallized

Calcareous Spar, coated with Quartz, found in tunnelling "St. Anthony's Nose," Peekskill, New York.

FAXON D. ATHERTON, Esq ; Specimens of Native Silver from Chili.

Major B. ALVORD, Fort Gratiot, Michigan ; Keg containing Fishes from Lake Huron, caught in the vicinity of Fort Gratiot.

Col. J. J. ABERT ; Box of Minerals from Arkansas.

R. J. POLLARD, Washington City ; Skeleton of Gazelle, (*Antelope saiga* Pall.) from Turkey.

THOMAS WHELPLEY, Brest, Michigan ; Cask of Unionidae and other Shells, from Lake Erie.

JOHN G. PENDERGAST, Sacketts Harbor ; Box of Minerals.

Dr. JARED P. KIRTLAND, Cleveland, Ohio : jar of rare Salamanders.

Major J. H. CARLETON, Fort Leavenworth ; Skull of Bighorn, (*Ovis montana*.)—Horns of Bighorn—Antlers of Black tailed Deer, (*Cervus macrotis*.)—Skull of Antelope, (*Antelope americana*.) from Black Hills, Fort Laramie.

W. PINGEON, Iowa ; Crania and other relics from various aboriginal mounds—Paintings in oil on cloth, of various Mounds in the North West, by a native Sioux Indian.

ROBERT HOWELL, Nichols, Tioga county, New York ; Box of Minerals and Fossils from Tioga county, New York.

The following Specimens have been received from Collectors who were assisted in their Explorations by the Smithsonian Institution.

AUGUSTUS FENDLER ; Collections of Plants made in the vicinity of Santa Fe, New Mexico, in 1846-47.

CHARLES WRIGHT ; Plants collected in an expedition from Texas to El Paso, in 1849.

THADDEUS CULBERTSON ; Skins, Skulls and Skeletons of Mammalia, from the Upper Missouri. Fossil vertebrate animals from White River.

Many specimens brought back by Mr. Culbertson were presented, to the Institution through him, by members of the American Fur Company ; among whom may be mentioned Messrs. Alexander Culbertson, Ferdinand Culbertson, Edward T. Denig, Schlager and Gilbert. Messrs. Denig and F. Culbertson, at the request of Mr. Alexander Culbertson, prepared skins of the Grizzly Bear, and other large Mammalia.

The following Specimens have been deposited in conformity with the provisions of the Act establishing the Smithsonian Institution.

GENERAL LAND OFFICE ; Minerals illustrating the Geological Survey of the Mineral region of Lake Superior, by Dr. Charles T. Jackson, contained in nineteen boxes.

Possessing myself large collections in different branches of Zoology, I have deposited them with the Institution. The following list contains a brief enumeration of the most important of these. It will thus be evident to the Naturalist, that the objects already secured by the Smithsonian Institution, if not as numerous as in other collections, are yet valuable as being more than usually complete in certain neglected branches of Natural History.

Summary of Specimens belonging to S. F. Baird, and deposited by him in the Cabinet of the Smithsonian Institution.

MAMMALIA.

Skins of the principal Mammalia of the Northern and Middle States, and of Eastern Europe, with numerous specimens of the smaller species, preserved in alcohol.

BIRDS.

A collection of about five hundred species of North American Birds, in skins, consisting of about twenty-five hundred specimens in the various stages of age, sex, and season.

About two hundred and fifty species of European Birds, in one thousand specimens.

Eggs of about one hundred and fifty species of North American Birds. Duplicates of many of them, in some cases amounting to over a hundred of a single species. The nests accompany the eggs of many of these species.

Nests and Eggs of about seventy-five species of European Birds, likewise in duplicate.

REPTILES AND FISHES.

A collection of the Reptiles and Fishes of the United States, at present contained in more than five hundred glass jars, and in numerous barrels, kegs and tin vessels. Most of the species are represented by numerous specimens, amounting in certain cases to hundreds and even thousands of a single species. No approximation can, at present, be formed as to the number, either of the specimens or of the species. Very many, especially of the Fishes, are still undescribed. Most of them have been personally collected in special expeditions to various parts of the country, such as Eastern and Western Pennsylvania, the Great Lakes, Northern and Eastern Ohio, Southern and Western Virginia, &c. Others have been furnished by contributors in Georgia, Florida, Mississippi, Arkansas and other states. This collection is especially rich in batrachian reptiles, which are preserved in large numbers in all their peculiar conditions of transformation. There is, in addition to these, a good collection of the fresh water Fishes and Reptiles of Central and Eastern Europe.

EMBRYOLOGY.

Embryos of many Birds, Mammals, and Batrachian Reptiles.

OSTEOLOGY.

Skulls and Skeletons of many North American vertebrata, amounting to some six hundred specimens. A considerable number, also, belonging to European species.

Also, Microscopical sections of Teeth and Bone of various species of North American vertebrata.

FOSSIL REMAINS.

A large collection of fossil bones from various caves in Pennsylvania and Virginia. This includes nearly all the species of Mammalia now living in the United States, with quite a number of those which are now entirely extinct. Chelonian remains likewise in large number.

Having thus presented the general statistics of the Museum up to the present time, I next proceed to a statement of the more active operations of the Natural History department of the Institution. For an account of what had been done up to 1850, by Messrs Lindheimer, Fendler and Wright, I would refer to the Appendix to your last report (for 1849). The expeditions undertaken since that time, have been those of Mr. Culbertson and myself.

The expedition of Mr. Thaddeus Culbertson took place during the past summer. For several years I have been receiving valuable specimens from different friends, in the Upper Missouri, whose other duties, however, prevented them from collecting as much as could have been wished. Mr. Culbertson being about to visit this region for the benefit of his health, offered to make for the Smithsonian Institution such collections in Natural History, as might be indicated to him as desirable; I accordingly prepared a list of desiderata, and among others, directed his attention to the eocene deposits of White River, known as the Mauvaises Terres or bad lands. He accordingly set out from St. Louis, in April, in company with his brother A. Culbertson, Esq., for many years connected with the American Fur company, and then on his way to look after its affairs in the remote regions

of the Yellowstone. From St. Louis they proceeded to St. Joseph in a steamboat, and thence by land, in a carriage to Fort Pierre. A day or two after arriving at this fort, Mr. Culbertson started out to the "Bad Lands" with a party, and after several days march reached the spot where Mr. A. Culbertson had previously found the fossil Mammalia, (*Poebrotherium Wilsonii*, *Merycoidodon Culbertsonii*, &c.,) presented by him to the Academy of Natural Sciences, and described by Dr. Leidy. Here additional specimens were soon found, and a cart was laden to its utmost capacity. With these, the party returned to Fort Pierre, whence, after a short rest, Mr. C. embarked on board the *El Paso*, and in her, ascended the Missouri to a point above Milk river, some hundreds of miles beyond Fort Union, and higher than any steamboat had ever gone previously. Descending the river again, after but short stops at the various trading posts, Mr. C. arrived in St. Louis in July, and reached his home in Chambersburg, Pennsylvania, in August. The main object of his trip, viz: relief from a distressing cough, threatening consumption, had been gained, and his renewed strength gladdened the hearts of his friends. But shortly after his return he was attacked by an unusually fatal form of bilious dysentery, then prevalent in the neighborhood, and died after an illness of a few weeks. Mr. C. left a full journal of all the events connected with his trip, though without any view to its publication. This, which was unrevised by him at his death, I found to contain much interesting matter, relative to the Natural History and topography of the country, the manners and statistics of the Indians, &c. The manuscript was put into my hands by the parents of Mr. Culbertson, with permission to select for publication such portions as might be deemed desirable. I therefore present this journal to you, as containing the only account of the country above Fort Pierre, since 1833, when it was visited by the Prince de Wied. It may be well to observe that I have not felt at liberty to alter the original to any material extent, which, combined with the fact of its entire lack of revision by the author, will be a sufficient excuse for any imperfections of style.

The fossil remains procured by Mr. Culbertson, constitute an exceedingly interesting series of Mammalian and Reptilian species, including many that had never been described. These have been referred to Dr. Leidy, for examination, who has already characterized four species of Mammalia:

Rhinoceros occidentalis.

" *Nebraskensis.*

Palaeotherium Bairdii.

Agriochærus antiquus.

The other specimens brought by Mr. C. consisted of skulls, skins and skeletons of the larger Mammalia, as buffalo, grizzly bear, prairie wolf, (*Canis latrans*) white wolf, (*Coccidentalis*) wolverine, (*Gulo luscus*,) beaver, &c., &c. Some of these he collected himself, others had been procured during the previous winter, by Messrs. E. T. Denig, and Ferdinand Culbertson, at the request of Alexander Culbertson. Various specimens were also obtained from other gentlemen connected with the American Fur Company. It is due to this company to state, that with their usual liberality, they rendered Mr. C. every assistance in their power, as they had previously done to the Prince de Wied, Nicollet, Audubon, Evans and other travelers. The thanks of the Institution are due to Messrs. Denig and F. Cul-

bertson, and especially to Mr. Alexander Culbertson for their valuable services. The latter gentleman bore the entire expense of the trip from Fort Pierre to the Mauvaises Terrés, besides paying a considerable sum to hunters and others for many of the specimens sent.

The second expedition referred to as undertaken by myself, had mainly for its object the investigation of the ichthyology of Northern New York and Vermont. With three companions, in the months of July and August last, I visited the northern shores of Lake Champlain, the valley of the Upper Hudson, Lake George, the St. Lawrence river, lake Ontario and Seneca lake.

In this trip many species of animals, and especially of fishes, both described and undescribed, were obtained, and many interesting facts ascertained with regard to their geographical distribution. A remarkable new genus of Cottoid fishes (*Trigloopsis*), discovered in lake Ontario, will shortly be published by the Institution, in a monograph prepared by Mr. C. Girard.

I beg leave in conclusion to present some general suggestions in regard to future operations of the Smithsonian Institution, in the department of Natural History. It is a fundamental principle in its organization, as presented in the programme and in your annual reports, not to attempt complete collections of all natural objects, but rather to gather up such materials for investigation as have been comparatively neglected by others. It may, indeed, be desirable, for purposes of general examination, to have extensive series of specimens from the three kingdoms of nature—animal, vegetable, and mineral, so far as they can be procured and exhibited without undue expense of time, money and space. For the present, however, attention should be directed mainly to such branches as hitherto may not have had their due share of attention.

A prominent object in making collections should be to furnish to travellers the means of determining the character of objects collected in various parts of North America.

Hitherto, officers of the army returning to Washington have generally been obliged to send or carry these objects out of the city, for the purpose of identification or verification, thus involving a considerable loss of time and credit. These specimens becoming widely scattered, rarely return hither, and when another occasion arises, the whole labor has to be repeated. By retaining them here and combining with them such series of specimens from North America, and other parts of the world, as may be specially procured for the purpose, very little delay in making up reports, need hereafter arise. It will, of course, be necessary to call in the aid of the library in procuring all the general and special works which may be required in these investigations. Towards such help the rich collection of transactions of learned societies, already in the library of the Institution, and augmenting daily, will greatly tend.

Collections illustrating the general Natural History of North America, become then, an object of primary importance. Much valuable material of this kind is now on hand, and much, it is hoped, will be procured in the various ways hereafter specified. An exceedingly important aid to this is furnished by the act of Congress establishing the Smithsonian Institution which specifies that all objects of Natural History belonging, or hereafter to belong to the United States, in whosoever custody the same may be, shall be delivered to such persons as are authorized by the Board of Regents to receive them. This entrusts to the Institution the custody of all collec-

tions publicly and officially made; but there are many valuable specimens procured in a private way whose acquisition must depend on the co-operation and assistance of officers of the various expeditions, and of heads of departments. Officers stationed at the various military posts, have it in their power to do much, by procuring the objects of Natural History in their vicinity, and forwarding them to Washington. It is earnestly hoped that this co-operation may be obtained generally.

Next in importance to North American objects of nature, are those of Europe. The ties uniting the two continents are not merely those of moral, civil and political relationship, for the connection existing between the Natural History of the two is almost as intimate. A large proportion of the genera found in the one, occur in the other, often the same species, or those that are very closely allied. This is true of all orders of animals and of most families of plants.

Next to Europe comes Japan, a region which, in some respects, is more closely allied to our country, than even Europe. This is especially the case with respect to the reptiles, some of which, as species of *Plestiodon*, and others have been considered by eminent herpetologists absolutely identical with North American. Unfortunately there are at the present time almost insuperable difficulties in the way of procuring Japanese specimens; the Dutch Naturalists being the only ones who have succeeded in exploring even the shores of this country. Little can be done, therefore, except by exchange with the museums of Holland.

With regard to collections from other countries than those specified, the best rule will be to seek for those series which the other museums of the country do not possess. What these are, I do not, at present, feel prepared to state; but hope to have it in my power in a future report, to illustrate more fully this subject, in a general account of the different collections in North America.

It may, perhaps, be well to indicate briefly the branches of North American Natural History which have received most attention. Mammalia have been ably investigated by Godman, Harlan, Audubon, Bachman and others; the present state of our knowledge of the subject being exhibited in the works of the two last named gentlemen. There is, however, no good collection of these animals; that of the Academy of Natural Sciences of Philadelphia, being much the best in the country. The private collection of Mr. Audubon is more complete than any other. It is a mortifying fact that this gentleman was obliged to have recourse to foreign museums for the purpose of figuring and describing certain North American species, which should have been accessible in one collection, at least, in this country.

The ornithological collections of the country, both public and private are very numerous. Among the former, that of the Academy of Natural Sciences, is by far the best. The New York Lyceum, and the Boston Natural History Society have pretty good collections. Of private collections, among the best are those of Messrs. Bell, Giraud and Lawrence, of New York. The ornithology of North America, east of the Mississippi, has been pretty well worked up, but much remains to be done west of this boundary.

General collections of North American reptiles are very rare in this country, that of the Philadelphia academy as usual, being the best among public museums.

Fishes have been preserved in several museums throughout the country. The Boston Natural History Society has the best series of North American marine species. The New York Lyceum comes next. Neither possesses many fresh water species, being vastly exceeded in this respect by the collections of Professor Agassiz and my own. There is more difficulty in preserving alcoholic specimens, (as collections of reptiles and fishes must, for the most part necessarily be) than those that are dried; it is to this fact that the scanty representation of these classes of vertebrata, is owing.

Among insects, Coleoptera have been almost exclusively studied. The private collections of Messrs. Leconte, Haldeman, Morris, Harris, Mel-sheimer and many others, are rich in species. The Messrs. Leconte, father and son, have the largest of these, embracing many hundreds and indeed thousands of undescribed species. The public collection of the Academy of Natural Sciences at Philadelphia, and others, are of less value. Lepidoptera, or butterflies and moths, come next. The best collection perhaps of these, is that of Mr. Titian Peale, of Washington; Messrs. Harris, Morris, and Haldeman, and the Academy of Natural Sciences of Philadelphia, have also good collections.

Comparatively little is known of the other orders of insects. The Neuroptera and Orthoptera of New England have been collected by Dr. Harris; Diptera, Hemiptera, and Hymenoptera, have been almost entirely neglected. Say is almost the only American Naturalist who has occupied the whole field of Entomology.

Spiders have been ably investigated and abundantly collected by Hentz, who is still continuing his labors in this department. Much, however, remains to be done.

The Podophthalmian Crustacea are preserved in various cabinets, although many species yet await discovery. Messrs. Say, Dana, and Gibbes, are the principal workers in this field. The remaining orders, as Amphipoda, Entomostraca, Isopoda, &c., &c., have been almost wholly neglected.

The North American worms have never been collected to any extent.

Of all invertebrata, the hard parts of Mollusca, or shells, have received most attention in this country. There are numerous valuable cabinets, public and private, including both domestic and foreign species. The best public collection of American species, is probably that of the Academy of Natural Sciences. Among private ones, may be named those of Dr. John C. Jay, John S. Phillips, Isaac Lea, Major John Leconte, J. G. Anthony, Professor Haldeman, and others. Most of these gentlemen have had especial reference to Unionidae in their collections. Nothing, however, has been done towards preserving a series of the animals of shells.

Very little is known of the Radiata of North America. A few species are preserved in public museums, but by far the most extensive collection is that belonging to Professor Agassiz.

Phanerogamic plants have received much attention, and the private collections of Drs. Torrey, Gray and others, with numerous public ones of greater or less extent, leave comparatively little to be desired in this respect. Great additions are continually being received from the country west of the Mississippi, in collections made by officers of the army and private individuals. Among these should be mentioned Col. Fremont, Col. Emory, Capt. Stansbury, Major Rich, Messrs. Lindheimer, Wright, Fendler, Gregg, Wislizenus, Drummond, and others.

Cryptogamic botany has been considerably neglected until within a few

years past. The best collections are in the hands of private individuals, as Messrs. Sullivant, Tuckerman, Curtis, Bailey, Lesquereux, and others. A great deal remains still to be done in this branch of botany. The work of Dr. Harvey on North American Algæ, in preparation for the Smithsonian Institution, will tend greatly to stimulate collectors to pay attention to this order.

Collections in Palaeontology are quite numerous, though principally local. The best general collection is that of the Academy of Natural Sciences. Their museum is incomparably richer than any other in this country, in collections of fossil vertebrata. The only collection of any extent, of the fossil bones found in the caves of the United States, is in the cabinet of this Institution. Of the interesting Eocene species of the Upper Missouri, Dr. Evans of Washington has made an exceedingly valuable collection, under direction of the Land Office. Next to this comes a similar one made by Mr. Culbertson for the Smithsonian Institution. An excellent collection of tertiary fossils is in possession of Professor F. S. Holmes, of Charleston, South Carolina. The tertiary and cretaceous fossil shells in the Philadelphia Academy are very numerous in species.

Many of the Mineralogical collections, of this country are very complete, both as respects Domestic and Foreign species. Such are the cabinets of Yale College, of the Academy of Natural Sciences, of Dartmouth College, of Bowdoin College, of Messrs. Markoe, Vaux, Clay, Ashmead, Alger, Bouve, and others. The general interest in the subject of Mineralogy is such as scarcely to require any additional stimulus, except so far as relates to Geology.

There are various ways in which collections may be made by the Smithsonian Institution, the principal of which are as follow :

Deposits by Government,

“ Individuals,

Exchange,

Purchase,

Employment of Collectors,

Donations.

To the first of these, I have already briefly referred. Up to the present time nothing has been received, save the series of specimens illustrating Dr. Jackson's report on the mineral lands of Lake Superior.

In some collections, specimens deposited by individuals form a conspicuous feature. These, when of considerable extent and completeness, or when illustrating some special researches or publications, are often very important, particularly as they are, in most cases, ultimately presented. Single specimens, unless of much value, are not generally desirable, as deposits. Free choice must, of course, be left the Institution, to say what shall be received, and what rejected.

To the individual collector, exchange with other individuals or with societies, forms the principal mode of forming his cabinet, beyond what may be personally procurable. This of course, implies that the specimens be gathered in larger quantities than would be necessary for a single collection. By a judicious system of exchange, based upon a large stock of duplicates, it becomes possible to procure almost any species, domestic or foreign, at little expense beyond that of transportation. To this end it is desirable to secure large numbers of such objects as may be specified hereafter.

Purchase is an excellent method of increasing a collection in a short time. It not unfrequently happens, however, that acquisitions thus made are of comparatively little value, as is found to be the case in regard to most of the miscellaneous museums, public and private, which are offered for sale. It is of course different with respect to collections made for a specific purpose by practised Naturalists, particularly when they contain undescribed species, or serve as the types of standard works. Considerable operations of this kind require large sums of money as will be seen by reference to the annual statement of expenditures made by the British government in behalf of the National Museum,* and with the numerous drafts on its income, it is not deemed expedient for the Smithsonian Institution ever to do much for its cabinet by direct purchase. It is confidently believed too, that the Museum will increase almost as rapidly as accommodations can be furnished, by donations of individuals, who may have it in their power to make collections, as well as by the special efforts of its officers. This hope is strengthened by the actual experience of other institutions.

The employment or assistance of collectors in visiting particular portions of country is productive of very important results at very little expense. In illustration of this, I would refer to the acquisitions made by the Institution through Messrs. Lendler, Lindheimer, Wright, Culbertson,

* *Expenditures by the British Government for the specimens of Natural History in the British Museum,*

FROM 1753 TO 1846 INCLUSIVE.

Natural History in general,	-	-	-	£ 10,405	3	8		
Minerals and Fossils,	-	-	-	17,238	12	1		
Zoological specimens,	-	-	-	12,751	4	11		
Botanical,	-	-	-	1,204	11	7		
							£ 41,599	12 3

1847.

Minerals and Fossils,	-	-	-	672	2	9		
Zoological specimens,	-	-	-	1,295	17	8		
Botanical specimens,	-	-	-	31	15	0		
Preparation of specimens,	-	-	-	1,317	7	5		
							3,297	2 10

1848.

Minerals and Fossils,	-	-	-	1,111	16	9		
Zoological specimens,	-	-	-	1,085	5	10		
Botanical specimens,	-	-	-	40	1	3		
Preparation of specimens,	-	-	-	1,259	11	6		
							3,496	15 4

1849.

Minerals and Fossils,	-	-	-	701	12	0		
Zoological specimens,	-	-	-	1,080	6	1		
Botanical specimens,	-	-	-	40	8	3		
Preparation of specimens,	-	-	-	945	14	7		
							2,768	00 11

Total, £ 51,161 11 2

Total Expenditures of all kinds, Natural History, Specimens, Books, Fine Arts, &c.

From 1753 to 1846 inclusive,	-	-	-	£ 816,063	11	0		
1847,	-	-	-	49,854	7	10		
1848,	-	-	-	49,845	2	11		
1849,	-	-	-	47,791	3	4		
							£ 963,555	5 1

and others. In this I am also borne out by my own experience. For several years past, I have been in the habit of visiting different portions of the United States, mainly in search of vertebrate animals. Accompanied on such occasions by zealous volunteers, I have succeeded in accumulating very extensive collections, including very many rare, and even undescribed species, besides obtaining much valuable information in regard to the general history of animals and plants.

It is mainly to the employment of collectors, that the great European museums owe their richness. In most of these a regular corps is employed continually, in travelling through various portions of the world and gathering large numbers of duplicates which are ultimately distributed, in exchange to other institutions.

In cases where memoirs, containing descriptions of animals or plants are presented to the Institution for publication, it should, as far as possible, be made a condition of their acceptance, that a series of the objects described be deposited for the purpose of being placed on record, and as authenticating the species. These should be labelled by the author, and the names thus attached, be ever afterward retained, even though they may have been incorrect, or may have been modified by subsequent discoveries. Individuals too, should be requested to present similar specimens to be kept in the same manner, illustrating descriptions published elsewhere than by the Smithsonian Institution.

At some future period, when the number of duplicates is sufficiently large, it may be possible to furnish lyceums, schools, colleges and other institutions with series of specimens properly labelled and arranged, of various branches of Natural History. Individuals too, engaged in special investigations, may hereafter find it practicable to procure objects in such quantities or of such character, as to render material, if not indispensable aid. This feature will, however, require the cordial co-operation of naturalists and collectors, to render it practicable.

I may remark that for the assistance of those who may be unskilled in the collecting, preservation and packing of specimens, a pamphlet containing the directions is now in preparation, and will shortly be issued by the Institution. This will be of considerable size, and in addition to the merely taxidermical portions, will contain notices of special desiderata, in particular portions of the world; a brief indication of the principal divisions of Natural History; and notices of the most accessible sources to which the beginner must apply for information respecting the different branches of the subject; the whole illustrated by figures.

Respectfully submitted,

SPENCER F. BAIRD

December 31, 1850.

No. II.

REPORT OF THE EXECUTIVE COMMITTEE.

The Executive committee submitted to the Board the following report of the expenditures, state of finances, &c., of the Smithsonian Institution up to the end of the year, 1850:

The whole amount of the Smithsonian bequest received into the Treasury of the United States, was-----	\$ 515,169 00
The annual interest on the same at six per cent., is-----	\$ 30,910 04
The interest which had accrued up to July, 1846, when the trust was placed under the care of the Regents, was-----	242,129 00
Total,-----	<u>\$ 757,298 00</u>

The Regents were authorized to expend on the building, the \$242,129, which had accrued in interest, together with such portions of interest on the original bequest as might remain unexpended in any year. It was, however thought that the income of the original bequest would be small in proportion to the demand made upon it, in carrying out the several parts of the extended plan of organization, and in defraying the necessary expenses of a large building. The Regents, therefore determined to increase the permanent fund by saving from the accrued and accruing interest, the sum of \$150,000, and for this purpose they resolved to limit the expenditure on the building and grounds to the sum of \$250,000. In order to save a part of the accrued interest, it was further resolved that the building should not be completed at once, but in the course of a number of years, and that the sum intended for its erection, should be put at interest, so that the income from this source, might in part, defray the expense of the edifice.

To carry out this plan, the \$242,000 of accrued interest with an addition of interest sufficient to make up \$250,000, were drawn from the Treasury and invested in United States securities, and in order that the Institution might not suffer loss by any depreciation of these securities, the contracts of the building were made payable in Treasury notes at par value, or in specie, at the option of the Regents.

This temporary investment has proved entirely successful. It has yielded a constant interest, and also a premium in almost every case of sale, on account of the rise in the value of government securities.

Of the original sum thus put at interest, there remains at present, \$180,000, which, at sixteen per cent., the present premium of government securities is worth \$208,800. From this it appears, that after all the expenditure on the building and grounds, on researches, publications and lectures, on the Library, Museum, and Gallery of Art, not only is the original bequest untouched, but there is now on hand, \$208,800, of unexpended income.

At the last meeting of the Board of Regents, it was resolved to fire-proof

the interior of the centre building, at an additional expense of \$44,000. The whole cost of the building and grounds in round numbers will then be \$300,000. The only way in which this additional expenditure can be met without interfering with the plan of finance above described, is that of extending the time of completing the building. The scheme of adding to the original bequest, will be placed beyond the possibility of failure from any further demands on account of the building, if the petition presented to Congress, to take from the Institution, to be placed with the original bequest, the sum of \$150,000 be granted, there will then remain on hand unexpended, a sum sufficient to complete the whole of the exterior, all the interior of the two wings and of the two ranges, and all the rooms of the towers of the building. This space will be sufficient for the wants of the Institution, until the accumulating interest will enable the Regents to finish the remainder in accordance with the fire-proof plan.

At the last meeting of the Board, a new system of keeping the accounts, and making the disbursements was adopted. From the beginning of the Institution up to this time, the accounts had been kept and the disbursements made by the Chairman of the Executive committee. This method was temporarily adopted, but had been continued until the expiration of the term of service of the Hon. W. W. Seaton, Chairman of the Executive committee, rendered a change necessary. This gentleman had kept the accounts from the beginning, and made the disbursements without charge to the Institution, and since it was not proper to burthen his successor with such onerous duties, it was resolved that the following system be adopted :

1. That an assistant be appointed to take charge of the funds for the current expenses of the Institution, who shall give security for the safe keeping of all moneys belonging to the Institution, which shall come into his possession.

2. That the funds before mentioned, be deposited until otherwise ordered, with Messrs. Corcoran and Riggs, to the credit of the Treasurer of the Institution.

3. That all bills presented for payment, shall be audited and certified by the Secretary, on whose order, the assistant acting as Treasurer shall pay them.

4. That the Treasurer report to the Secretary monthly, all payments made by him during the preceding month.

5. That all accounts be examined and certified by the Executive committee.

6. That the account books be kept in the Smithsonian building, so that the Secretary and Executive committee may have ready access to them.

The Hon. W. W. Seaton was chosen Treasurer, and signified his acceptance of the office, but that he would receive no compensation for his services.

The new system of accounts went into operation at the beginning of July last, and has been continued up to this time with satisfaction to the committee.

At the beginning of the institution it was not possible before knowing the developement of the plans of organization, in practical operation to adopt a classification of accounts showing the expenditure for different objects. The plan of operations is now however so far established, that a system of classification may be adopted.

The Secretary has accordingly, with the assistance of the other officers of the Institution, prepared a programme of accounts, which may serve until

the building is completed, and afterwards form the basis of a classification for all future operations. This programme which receives the approbation of the committee is as follows :

PROGRAMME OF ACCOUNTS.

I. BUILDING, FURNITURE AND FIXTURES, GROUNDS.

1. Pay on contracts for building.
2. Pay of architects and superintendents, including office and incidentals.
3. Expenses of building committee, including clerk hire.
4. Incidental expenses to building, viz :
 - (1.) Experiments on, and tests of, Building Materials.
 - (2.) Examination of Quarries.
 - (3.) Miscellaneous.
 - (4.) Premiums paid Architects.
5. Furniture and Fixtures for uses in common.

Do.	do.	Publications.
Do.	do.	Researches.
Do.	do.	Lectures and Apparatus.
Do.	do.	Library.
Do.	do.	Museum.
Do.	do.	Gallery of Art.
6. Grounds.

II. GENERAL EXPENSES.

1. Expenses of the Board of Regents and Committees.
2. Lighting and Heating.
3. Postage.
4. Transportation.
5. Stationery.
6. General Printing.
7. Incidentals general, including Messenger, Clerk hire, &c.
8. Salaries.

III. PUBLICATIONS, RESEARCHES AND LECTURES.

1. Publications.
 - (1.) Smithsonian Contributions to Knowledge.
 - (2.) Reports on Progress of Knowledge.
 - (3.) Other Publications.
2. Researches.
 - (1.) Meteorology.
 - (2.) Computations.
 - (3.) Investigations.
3. Lectures.
 - (1.) Pay of Lecturers.
 - (2.) Illustrations for Lectures.
 - (3.) Attendance, Lighting, Advertising, &c.
4. Apparatus.
5. Salaries.

IV. LIBRARY, MUSEUM, AND GALLERY OF ART.

1. Library.

- (1.) Cost of Books.
- (2.) General Catalogue.
- (3.) Copyrights.
- (4.) Incidentals to Library, Binding, Messengers, Clerk hire, &c.
- (5.) Salaries.

2. Museum.

- (1.) Explorations.
- (2.) Expenses of Collections.
- (3.) Cost of Transportation.
- (4.) Incidentals to Museum.
- (5.) Salaries.

3. Gallery of Art.

- (1.) Purchases.
- (2.) Incidentals.

The Secretary has also with the assistance of Professor Jewett, and Col. W. B. Randolph, of the United States Treasury Department, gone over all the accounts from the beginning of the Institution, and re-arranged them in accordance with this programme. In making this re-arrangement, and critical examination of all the accounts, they have found no errors of any magnitude, and the amount of receipts and expenditure in this new arrangement perfectly agree with those presented in the general account of Mr. Seaton.

In a few cases payments have been made in accordance with the spirit of the resolutions of the Board, but which fall under no special appropriation, the committee would therefore suggest that a special action of the Board be taken with reference to these.

GENERAL EXHIBIT

OF ALL THE RECEIPTS ON ACCOUNT OF THE SMITHSONIAN FUND, AND
THE DISPOSITION OF THE SAME, FROM THE BEGINNING OF
THE INSTITUTION, UNTIL THE PRESENT TIME.

Dr.

FUND ACCOUNT OF

RECEIPTS.			
1846	July 1,	To James Smithson, net proceeds of his bequest,	\$ 515,169 00
	"	Interest thereon to date, paid by the United States,	242,129 00
	Sept. 10,	H. W. Hilliard, Regent, over payment returned,	90
1847	Jan. 1,	Interest on assumed debt, 1st July to 31st December 1846, first half year,	15,455 07
	July 5,	Interest on assumed debt, to 1st July 1847, second half year,	15,455 07
	Oct. 21,	Interest on \$250,000 Treasury notes, to 17th August, six months,	7,500 00
	Nov. 26,	Proceeds of Treasury notes sold, viz: amount of notes,	\$ 10,000 00
		Interest to day of sale,	121 67
			<hr/> 10,121 67
			<hr/> \$ 805,830 71
1848	Jan. 1,	To proceeds of Prof. Henry's Lectures at Princeton,	\$ 1,000 00
	" 15,	Interest on assumed debt, to 1st January, 1848, third half year,	15,455 00
	April 1,	" on \$240,000 Treasury notes to 17th February, 1848, six months,	7,200 00
	" 4,	George M. Dallas, Chancellor. premium paid for \$7,000 Treasury notes.	105 00
		" " deposit to credit of Wm. W. Seaton, Chairman,	95 00
	May 10,	Proceeds of Treasury notes viz, amount of notes \$ 7,000 00	
		Premium thereon,	140 00
		Interest to day of sale,	45 50
			<hr/> 7,185 50
	July 7,	Interest on assumed debt, to 1st July, 1848, fourth half year,	15,455 00
	Aug. 17,	" \$240,000 Treasury notes, to 17th August, six months,	7,200 00
	" 24,	Proceeds of Treasury notes viz, amount of notes, 5,000 00	
		Premium,	\$ 200 00
		Less commission,	12 50
			<hr/> 187 50
		Interest to day of sale,	5 00
			<hr/> 5,192 50
	Oct. 16	Proceeds of Treasury notes, viz: amount of notes 9,000 00	
		Premium,	\$ 270 00
		Less commission,	11 25
			<hr/> 258 75
		Interest to day of sale,	85 50
			<hr/> 9,344 25
			<hr/> \$ 68,232 25
1849	Jan. 5,	To Interest on assumed debt, fifth half year,	\$ 15,455 14
	Feb. 17,	Treasury notes, this amount redeemed and funded in United States six per cent stock,	226,000 00
	" 28,	Interest on Treasury notes, \$ 226,000, to 17th February, six months,	6,780 00
	April 17,	United States six per cent stock sold, viz, amount of stock \$ 16,000 00	
		Premium,	\$ 1,600 00
		Less commission,	40 00
			<hr/> 1,560 00
	July 2,	Interest on \$ 210,000 stock, from 17th February, to 30th June, 1849	4,614 24
	" 5,	" assumed debt, sixth half year,	15,455 07
	Oct. 20,	United States six per cent stock sold, viz, amount of stock, \$ 10,000 00	
		Premium,	\$ 1,312 50
		Less commission	25 00—1,287 50
			<hr/> 11,287 50
			<hr/> \$ 297,151 95

THE SMITHSONIAN INSTITUTION.

Ch.

EXPENDITURES.

1846	July 1,	By the United States—assumed debt,	\$ 515,169 00
	Sept. 6,	Wm. W. Seaton, Chairman Executive Committee —	
		From treasury United States,	2,000 00
	" 10,	Repaid by Mr. Hilliard,	90
	Dec. 21,	From treasury United States,	2,000 00
1847	Feb. 17,	Treasury notes, proceeds of warrant on treasury United States,	250,000 00
	" 25,	Wm. W. Seaton, Chairman Executive Committee —	
		From treasury United States,	3,584 07
	July 8,	Second half year, interest on assumed debt,	15,455 07
	Oct. 21,	Six months interest on \$250,000 treasury notes,	7,500 00
	Nov. 26,	Proceeds of \$10,000 notes sold,	10,121 67
			<u>\$ 805,830 71</u>

1848	Jan. 1,	By Prof. Joseph Henry, Secretary, on account of his salary,	\$1,000 00
	" 15,	Wm. W. Seaton, Chairman Executive Committee, third half years interest,	15,455 00
	April 1,	Treasury notes, investment of so much interest on notes received this day,	7,000 00
		George M. Dallas, Chancellor, balance of said interest,	200 00
	" 4,	William W. Seaton, Chairman Executive Committee, deposited by Mr. Dallas,	95 00
	May 10,	Proceeds of notes sold,	7,185 50
	July 5,	Fourth half year's interest	15,455 00
	Aug. 2,	Interest on Treasury notes due 17th August,	7,200 00
	" 24,	Proceeds of notes sold,	5,192 50
	Oct. 16,	Proceeds of notes sold,	9,344 25
		Profit and Loss, premium paid for \$7,000 treasury notes,	105 00

\$ 68,232 25

1849	Jan. 9,	By Wm. W. Seaton, Chairman Executive Committee, fifth half year's interest,	\$ 15,45 14
	Feb. 17,	United States six per cent stock, loan of 1847,	226,005 00
	28,	Wm. W. Seaton, Chairman Executive Committee,	0
		interest on Treasury notes, 17th February,	6,780 00
	April 17,	Proceeds of stock sold,	17,560 00
	July 2,	Interest on stock to 30th June,	4,614 24
	" 7,	Sixth half year's interest,	15,455 07
	Oct. 20,	Proceeds of stock sold,	11,287 50

\$ 297,151 95

Dr.

FUND ACCOUNT OF

RECEIPTS.

1850	Jan.	2,	To interest on \$ 200,000 six per cent stock, to 1st of			
			January, six months,		\$ 6,000 00	
		4,	" on assumed debt, seventh half year,		15,455 07	
	July	2,	Interest on \$ 200,000 six per cent stock, to 30th			
			June, six months,		6,000 00	
		9,	" " eighth half year,		15,455 07	
		27,	United States six per cent stock sold, viz, amount			
			of stock,	\$ 10,000 00		
			Premium,	\$ 1,400		
			Less commission,	25—	1,375 00	
					<u>11,375 00</u>	
	Sept.	19,	United States six per cent stock sold, viz, amount			
			of stock,	\$ 10,000 00		
			Premium,	1,600 00		
					<u>11,600 00</u>	
	Dec.	28,	Washington Monument, office furniture sold to			
			that society,		50 71	
		31,	Interest on \$ 180,000 six per cent stock, to 31st			
			December, six months,		5,400 00	
					<u>\$ 71,335 85</u>	

THE SMITHSONIAN INSTITUTION.

Cr.

EXPENDITURES.

1850	Jan. 2,	By William W. Seaton, Chairman Executive Committee, interest on stock to 1st January,	\$ 6,000 00
	4,	Seventh half year's interest,	15,445 07
July	2,	William W. Seaton, Treasurer, interest on stock to 30th June,	6,000 00
	9,	Eighth half year's interest,	15,455 07
	27,	Proceeds of stock sold,	11,375 00
Sept. 19,		do. do	11,600 00
Dec. 28,		Furniture sold on account of pay of architects, &c.,	50 71
	31,	Interest on stock to 31st December, 1850,	5,400 00

\$ 71,335 85

The following is a General Statement of all the Expenditures from the beginning of the Institution to the end of the year 1850, arranged in accordance with the programme of accounts before given.

	To 31st Dec. 1847.	Year 1848.	Year 1849.	Year 1850.	Aggregate.
I. BUILDING, FURNITURE AND FIXTURES, GROUNDS.					
Pay on contracts for Building,	\$ 22,890 00	\$ 48,810 00	\$ 50,300 00	\$ 24,000 00	\$ 146,000 00
Pay of Architects, Superintendents, &c.,	3,482 76	2,949 86	3,124 12	2,459 42	12,016 16
Expenses of Building Committee,	1,338 85	17 24		6 00	1,362 09
Experiments on and tests of Building materials,	488 13	62 00	15 50		565 63
Examination of quarries,	250 76				250 76
Premiums paid Architects,	1,250 00				1,250 00
Miscellaneous, incidental to Building,	{ 300 63	50 00	111 21	1,568 05	2,329 89 }
Furniture and Fixtures for uses in common,	{ 209 00	1,088 65	1,868 97		3,766 62 }
do. Publications,			1,717 52	892 93	2,610 45
do. Researches,					
do. Lectures,			25 00	166 50	191 50
do. Library,			347 00	545 80	892 80
do. Museum,					
do. Gallery of Art,					
Grounds,	1,293 50	109 88	727 17	1,615 96	3,746 51
II. GENERAL EXPENSES.					
Expenses of Board of Regents and Committees,	3,323 45	114 25	84 25	216 12	3,733 07
Lighting and heating,			378 95	58 50	437 45
Postage,	60 06	65 76	307 36	183 05	616 23
Transportation,	38 96	85 92	206 19	517 55	908 62
Stationery,	7 02	63 11	85 46	231 85	387 44
General Printing,	294 63	68 50	199 00	134 25	696 38
Apparatus,	1,546 47	412 71	1,799 99	899 92	4,659 00
Incidentals general,	1,947 75	1,337 03	1,347 33	1,411 72	6,873 83
Salaries, do.	1,014 49	4,205 20	4,811 58	4,548 48	14,039 75
III. PUBLICATIONS, RESEARCHES, AND LECTURES,					
Smithsonian contributions to knowledge,	756 00	2,956 87	2,082 87	3,662 36	9,458 10
Reports on progress of knowledge,			444 00	935 91	1,379 91
Other Publications,			152 54	585 98	738 52
Meteorology,			814 00	1,256 06	2,070 66

From the foregoing exhibit it will be seen that the funds of the Institution have been carefully husbanded, are now in a good condition, and that, though the cost of the building will exceed the first estimate, yet the original plan of saving a portion of the accrued interest to increase the capital, will, in due time be carried out.

The Committee are of opinion, that an expenditure of twenty-five thousand dollars may be allowed from the annual income for defraying the expenses of the Institution, and for carrying on the several parts of the programme, during the present year, and they will hereafter introduce a resolution to that effect.

Signed,

A. D. BACHE,
J. A. PEARCE,
JOS. G. TOTTEN,
Committee.

REPORT OF THE TREASURER OF THE INSTITUTION.

Up to the 3d of July, 1850, the accounts of the Institution, were kept by the Chairman of the Executive Committee, who also acted as Treasurer. At that time a new system of accounts was adopted, according to which they were placed under the charge of the Secretary and the Executive committee, and I was appointed Treasurer. Agreeably to this arrangement, there was deposited to my credit with Corcoran & Riggs, for the current expenditure of the Institution, sums amounting to \$49,880 78, of unexpended income of the preceding half year, as detailed and accounted for in the accompanying statements.

Signed

W. W. SEATON, *Assistant,*
Acting as Treasurer.

[The Treasurer's statement is included in the preceding detailed account.]

No. III.

REPORT OF THE BUILDING COMMITTEE.

The Building committee, in compliance with their appropriate duty, present the following report of the operations, expenditures, and progress on the building, during the year 1850.

At the last session of the Board, resolutions were adopted, directing a survey of the whole building, and a report on the manner and faithfulness in which the building contract had been executed, and the best plan for finishing the remainder of the building.

It was found by this examination, that the exterior of the building had been well constructed, but that in order to reduce the cost, a plan had been adopted and materials employed for the interior, not proper for a building destined to contain property too valuable to be exposed to even a re-

more danger of fire, and which, especially so far as it shall consist of donations, will involve the implied condition that it shall be safely preserved.

In accordance with this result, a resolution was adopted, directing the interior of the centre building to be constructed in fire-proof, and that the time of finishing it be extended until the accumulating interest would be sufficient to meet the additional expense.

According to the decision of the Architect, who, by the terms of the original contract, is the umpire between the Regents and the contractor, the latter is entitled to the sum of \$ 185,154 for completing the whole exterior of the building and the interior of the wings, ranges, and towers. When this much is finished, the present contract will terminate ; though the same contractor has agreed, should the Regents choose to accept his proposition, to finish the remainder of the interior in fire-proof, on the terms mentioned in the annexed report of the Architect.

Agreeably to the estimates of Mr. Renwick, and the proposition of Mr. Cameron for fire-proofing, the whole cost of the building when finished, will be \$ 284,000; but as the preliminary expenditure for premiums to architects, and other incidental charges connected with the work are not included in this estimate, the committee think it will be safer to state the whole cost at, say in round numbers, \$300,000.

Since the commencement of the building, there has been expended on the grounds \$ 3,747 51. The committee, however, are pleased to be able to inform the Board, that but little more expenditure on this account will probably be necessary beyond that which is requisite for the preservation of the trees and shrubs already planted.

An appropriation has been made by Congress for the general improvement of the public grounds, or, as they are commonly called the *Mall*. Mr. Downing, the well known writer on Rural Architecture, at the request of the President, is now preparing a plan for converting the whole mall, including the Smithsonian grounds, into an extended landscape garden, to be traversed in different directions by gravelled walks and carriage drives, and planted with specimens, properly labelled, of all the varieties of trees and shrubs which will flourish in this climate.

In the opinion of the committee, the adoption of a general plan for the improvement of the public grounds is an object of much importance. A small appropriation, annually expended with reference to a well digested plan, would do more in a few years to produce lasting effects, than many times the same sum, expended in accordance with the peculiar fancy of each succeeding superintendent.

If the plan before mentioned be adopted, (and the committee hope that it will be,) the Smithsonian lot will form a part of an extended park, of which the Smithsonian building, by its site and picturesque style of architecture, will form a prominent and most attractive feature.

For the accommodation of those who attend the lectures, plank walks have been put down from the doors of the building to the east and west extremities of the Smithsonian grounds. Much difficulty is still found, however, in getting access to the building during muddy walking ; but in the opinion of the committee, it belongs to the corporation of the city of Washington or other authority to construct and keep in good condition the approaches to the building which are beyond the Smithsonian possessions.

A foot bridge across the canal at Tenth street, would greatly in-

crease the facility of access to those who reside in the central portion of the city. The construction of such a bridge has been proposed to the city council, and your committee hope that the objects and operations of this Institution will commend the proposition to their favorable consideration.

For a minute statement of the progress made in the building, and other details connected with the subjects noticed in the foregoing remarks, the committee refer to the report of the architect hereto appended.

Respectfully submitted,

Signed

JEEFERSON DAVIS,
HENRY W. HILLIARD.
WALTER LENOX.

WASHINGTON, January 7, 1851.

To the Honorable the Building Committee of the Smithsonian Institution :

GENTLEMEN: By a resolution of the Honorable the Board of Regents, passed July 3, 1850, it was determined to change the plan originally adopted for the finish of the interior of the central building, which consisted of wooden columns and girders, and to substitute in its place a plan of fire-proofing.

In accordance with the above resolution, the undersigned prepared and submitted to the honorable the committee charged with the examination of the building, four different plans for fire-proofing, and the one preferred by him was adopted.

This plan may be described as follows: The foundation will consist of a series of stone piers, connected by a system of inverted arches of brick, resting on base courses of long stone and laid in cement mortar; the inverted arches are arranged in such manner as to insure an equal pressure in all parts of the foundation, and thus to counteract, as far as possible, any unequal settlement of the earth upon which the building rests. The first story of the building containing the library, &c., will be constructed with piers and groined arches of brick, laid in cement mortar; and the second story containing the museum, will be finished with cast iron columns and girders and a groined ceiling furred with wrought iron. The whole interior will be plastered on the above described brick and iron work, in the same manner as was specified in the original contract, so as to complete the building in harmony with the original design.

Though this change in construction will add to the expense of the building, it is believed that the additional cost will be repaid by the permanence of the fire-proofing and the perfect security it will afford to the valuable collections which may hereafter be placed in this portion of the building.

The above determination of the honorable the Board of Regents, also rendered it necessary that only such portions of the work embraced in the original contract for the building as would harmonize and become an integral part of the fire-proofing, should be constructed by the present contractor and that the expense of the portions not necessary to effect this change should be deducted from the original contract price.

It therefore became necessary to determine accurately the exact amount to be paid to the contractor under the above alteration in plan, and the undersigned, by the direction of the honorable the Building committee, made

a pro rata estimate of all the work embraced in the original contract, which estimate was based upon the original contract price.

From this estimate an exact decision was then made of the amount to be paid to the present contractor for the work, which he would be required to finish in conformity with the plan of fire-proofing, which was found to be \$185,154. The following is an estimate of the cost of completing the whole building and its accessories, on the amended plan :

Amount to be paid G. Cameron, for completing portions of building embraced in original contract, and necessary in amended plan.....	\$185,154 00
Expense of fire-proofing central building, estimated at	44,000 00
Plastering central building,.....	8,000 00
Galleries to Library and Museum,.....	2,000 00
Stairways to “ “.....	425 00
Furniture to “ “.....	4,700 00
Extra cartage,.....	200 00
Materials,.....	1,000 00
Heating Central Building,.....	3,500 00
Furnaces already put up,.....	1,135 63
Architect, Superintendent and incidental expenses of office,....	16,500 00
Grounds,.....	4,000 00
Additional Furniture,.....	4,000 00
	<hr/>
	274,614 63
Add for contingencies,.....	9,385 37

Making the total amount of.....\$ 284,000 00

It is the belief of the undersigned, that the above amount of \$284,000 will, with proper economy, be sufficient to defray the expense of completing the building, and that when thus finished, it will, for cheapness and durability be unsurpassed by any building with which I am acquainted.

By a resolution, passed at the same time as the one directing the above alteration in plan, the honorable the Board of Regents also decided at the suggestion of the Hon. Jefferson Davis, “that the exterior of the building, “and the interior of the towers be completed in accordance with the plan, “and within the time specified in the contract.”

To carry out this decision, the operations on the building, during the last year, have principally been directed to the completion of the exterior of the building and towers.

It was the hope of the undersigned, that the towers would have been finished and roofed in before the winter.

This expectation, has, however, not been realized, owing to the delay occasioned by the repairs in the Chesapeake and Ohio canal, which was not navigable for a period of nearly four months.

The contractor was therefore unable to convey his stone from the quarry, and very little work was done on the building during the months most favorable for working.

The present condition of the building is as follows: The eastern and western wings are completed with the exception of some small items which will be left unfinished until a few weeks before the completion of the present contract.

Mis.—5.

The central is roofed in and slated, and enclosed in such manner as to be perfectly protected from the weather.

The principal front tower is carried up to a height of one hundred and twenty-two feet, and covered in temporarily for the winter.

The stone and mason work of the lower central front tower is completed, and the roof is on and slated.

The campanile and north east corner towers are roofed in.

The central south tower is carried up to a height of forty feet.

The south east and south west corner towers are carried up to the height of the cornice of the cell of the main building.

The contractor states, that all the stones necessary for the completion of the building are quarried. The greater portion of them are delivered at the building, and will be cut during the present winter.

During the last year portions of the roads around the building have been graded and many trees and shrubs have been set out on the grounds.

It is a source of satisfaction to the undersigned that the walls of the building have not as yet, shown any signs of settlement. When the various heights of the wall and towers, ranging from twenty-six to one hundred and twenty-two feet are considered, this circumstance affords a satisfactory proof that the principles adopted in the construction of the building are correct, and that the care taken in calculating the weights and pressure of the different walls has not been uselessly expended, and that the construction of these most important parts of the building has been well performed.

The following is a statement of the amount expended in the building up to the 31st of December, 1850 :

Amount expended on building up to December 1, 1847, was as	
then stated,-----	\$25,002 67
Amount expended from December 1, 1847, to December 31,	
1848, -----	53,934 74
Amount expended from December 31, 1848, to December 31,	
1849, -----	56,383 76
The amount expended on the building during the	
the year 1850, has been as follows :	
Paid G. Cameron, contractor,-----	\$24,000 00
Paid Architect, Superintendent, and incidental	
expenses of office, -----	2,459 42
Miscellaneous,-----	1,868 05
Grounds, improvement of,-----	1,616 46
	<hr/>
	29,943 93

Making total amount expended on building up to December	
31, 1849,-----	\$165,265 10

I remain, very respectfully,

Your obedient servant,

JAMES RENWICK, JR.,
Architect Smithsonian Institution.

NO. IV.

FIFTH ANNUAL MEETING OF THE BOARD OF REGENTS
OF THE SMITHSONIAN INSTITUTION.

WEDNESDAY, JANUARY 1, 1851.

The Board of Regents met this day at 12 o'clock, noon, in accordance with notice previously given.

On motion, Mr. Hawley was called to the Chair.

The Secretary stated that a few days would be required to make up the accounts for the year just expired, and that a quorum of the Regents was not present.

Whereupon, on motion,

The meeting adjourned to Tuesday, 7th instant, at 10 o'clock A. M.

TUESDAY, JANUARY 7, 1851.

The Board of Regents met this day, at 10 o'clock A. M., according to adjournment.

Present: Messrs. Bache, Davis, Fitch, Hawley, Hilliard, Lenox, Mason, Pearce, Rusk, and Totten.

Mr. Hawley took the Chair, and the proceedings of the last meeting were read.

The Secretary made a statement relative to the election of a Chancellor, the office being vacant by the elevation of Mr. Fillmore to the Presidency of the United States.

On motion of Mr. Davis, it was

Resolved, That the Board proceed to elect, by ballot, a Chancellor of the Smithsonian Institution, whose term of office shall continue until the 4th day of March, 1853.

Tellers having been appointed, the votes were counted, and the Honorable Roger B. Taney, Chief Justice of the United States, was declared unanimously elected.

The report of the Executive Committee for the year 1850, was then presented, and read by Mr. Bache.

On motion, it was laid on the table, until the Treasurer's statement could be prepared.

The reading of the Secretary's Annual Report, relative to the operations of the Institution, for the past year, was then commenced.

An account was given of the several Memoirs presented during the past year, and copies of all that had been printed during the same time, were placed upon the table.

The hour of adjournment having arrived, on motion, the Board adjourned to meet on Friday the 10th instant, at 10 o'clock A. M.

FRIDAY, JANUARY 10, 1851.

The Board of Regents met this day at 10 o'clock.

The Honorable Roger B. Taney appeared and took the Chair, as Chancellor of the Smithsonian Institution.

The following members were present: Messrs. Bache, Davis, Fitch,

Hawley, Hilliard, Lenox, Mason, Pearce, Rush, Totten, and Mr. Seaton, Treasurer of the Institution.

The Chancellor, on taking the Chair, expressed his thanks for the honor conferred on him by his election; his regret that on account of the meetings of the Supreme Court, he had not previously been able to attend the sessions of the Board, though he hoped in future to be able to do so; also the interest he felt in the Institution, and his gratification with reference to its present condition.

The proceedings of the last meeting were then read.

The Building Committee presented their Annual Report, including a report from the Architect. It was on motion accepted, and ordered to form a part of the Regents' report to Congress.

In connection with the report of the Building committee, Mr. Lenox made a statement relative to a proposition for the erection of a foot bridge over the canal at Ninth or Tenth street, at the expense of the corporation of the City of Washington, for facilitating the approach to the Institution. He also stated that Mr. Ellet, the Engineer, had offered to superintend, free of charge, the erection of a wire bridge at the place mentioned, and expressed his belief that a bridge could be constructed during the present year.

Mr. Seaton the Treasurer, presented a report of the monies placed to his credit on account of the Institution, and the manner in which they had been expended. At the request of Mr. Seaton, and on motion of Mr. Davis, the report was referred to the Executive Committee for examination.

The reading of the Secretary's report was then proceeded with, including a statement relative to the Foreign distribution of the first volume of Smithsonian Contributions, and the method of keeping the account of the exchanges with foreign societies, also an account of the progress made in the operations relative to Meteorology.

Specimens of the Barometers, Thermometers, Rain gauges and Wind vanes prepared for the Smithsonian observers, were exhibited to the Board.

The Board, on motion, then adjourned to meet on Saturday next, 18th instant, at 10 o'clock A. M.

SATURDAY, JANUARY 18, 1851.

The Board of Regent met this day at 10 o'clock, A. M.

Present: Messrs. Bache, Colcock, Davis, Hilliard, Pearce, and Rush. The Chancellor being absent, Mr. Pearce was called to the Chair.

The proceedings of the last meeting were read.

Mr. Bache, on behalf of the Executive Committee, presented a detailed statement of all the expenditures from the beginning of the Institution to the end of the year 1850, classified according to the programme of accounts before given.

The Secretary stated, that in obedience to the instructions contained in the resolutions of the Board adopted June 1, 1850, the following petition relative to funding \$150,000 of accrued interest had been drawn up for presentation to Congress; but owing to the press of business of last session, and by the advice of the members of the Board belonging to the Senate and House of Representatives, it had not been presented up to the present time.

Mr. Davis suggested that the petition be amended by inserting the words

“making in all a principal fund of \$715,000,” at the close of the fourth paragraph which was agreed to.

Amended, the petition reads as follows :

To the Honorable, the Senate and House of Representatives, in Congress assembled :

GENTLEMEN: The Board of Regents of the Smithsonian Institution have directed me to transmit to your honorable body, the resolutions appended to this letter, and to solicit the passing of a law, in accordance therewith.

It is known to your honorable body, that the original sum received into the United States Treasury from the Smithsonian bequest, was a little more than \$515,000, and that at the time of the passage of the act incorporating the Institution, \$242,000 had accrued in interest, which sum or so much of it as might be deemed necessary, the Regents were authorized to appropriate to a building. It is also known to your honorable body, that the act of incorporation directed that provision should be made for the establishment of a Library and Museum, together with the erection of a building on a liberal scale to contain them.

While the Regents in their plan of organization obeyed these instructions, they also by virtue of the power invested in them, and in conformity with the terms of the bequest, adopted additional plans for the more immediate promotion of the increase and diffusion of knowledge among men, by means of Researches, Publications, Lectures, &c.

In order however, to carry out the several parts of this more extended plan, it was found absolutely necessary that the annual income of the Institution should be increased. To accomplish this, it was resolved, instead of expending at once the \$242,000 on a building, carefully to husband the same and to erect the building in the course of several years, in part out of the proceeds of the sum before mentioned, and in part out of such portions of the income of the original fund as could be spared from the ordinary operations of the Institution. This scheme has been effectually carried out, and the Regents now ask to be allowed to place in the Treasury of the United States along side of the original bequest, and upon the same terms, never to be expended, the sum of \$150,000 of accrued interest, and to be allowed to add to this from time to time, such other sums as may come into their possession by donation or otherwise, until it, with the sums thus added shall amount to \$200,000, making in all a principal fund of a little more than \$715,000.

After this deposit of \$150,000, the Regents will still have sufficient money on hand to finish the whole exterior of the building, and such portions of the interior in addition to those now completed, as may be wanted for several years to come, they then propose gradually to finish the remainder in such portions as may be wanted out of the annual accruing interest.

The sole object of the request is the permanent investment and perpetual security of the accumulated fund, and when your honorable body is assured that the organization and operation of the Institution have received the approbation of the wise and good, not only in this country, but in every part of the world where literature and science are cultivated, the undersigned trusts that the request will be granted.

And your petitioner will ever pray, &c.

Signed

JOSEPH HENRY, *Secretary*
Of the Smithsonian Institution.

RESOLUTIONS OF THE BOARD OF REGENTS

Of the Smithsonian Institution, adopted at their meeting of June 1, 1850, and appended to the foregoing petition.

Resolved, That it is expedient to enlarge the permanent fund of the Institution, by the investment of such sums not exceeding \$200,000 as may have been, or shall be received for accrued interest or otherwise, in addition to the principal sum of the Smithsonian bequest, augmenting the principal sum to that amount, and that application be made to Congress to receive such sums not exceeding \$200,000 as may have been or shall be received for accrued interest or otherwise into the United States Treasury upon the same terms on which the original bequest has been received.

Resolved, That the Secretary be requested to communicate a copy of this resolution to Congress, and to request that provision be made by law in accordance therewith.

The Secretary also brought before the Board, the subject of the remainder of the Smithsonian bequest, left as the principal of an annuity payable to Madame de la Batut, mother of the nephew of James Smithson.

Mr. Rush gave an account of this annuity and stated that he had left the business in the hands of attorneys, to whom he had written in 1846. A copy of this correspondence was read, and Mr. Rush was requested to communicate with the above mentioned persons relative to this business.

The reading of the Secretary's report was then continued, including Professor Jewett's report on the Library, illustrated by specimens of a new plan of stereotyping catalogues of libraries by separate titles.

On motion the Board adjourned to meet on Saturday 25th instant at 10 o'clock A. M.

SATURDAY, JANUARY 25, 1851.

The Board of Regents met this day at 10 o'clock A. M.

Present: Messrs. Davis, Fitch, Lenox, Mason, Pearce, and Taney.

The Chancellor occupied the Chair.

The proceedings of the last meeting were read.

The reading of the Secretary's report was then continued, including the report of Professor Baird on the Museum.

On motion of Mr. Davis, it was

Resolved, That the thanks of the Board be presented to Mr. Alexander Culbertson for the liberal aid rendered by him in procuring specimens of Natural History for the Institution; also, to Messrs. Edward T. Denig, Ferdinand Culbertson, and the other gentlemen of the American Fur company mentioned in Professor Baird's report for similar services.

The concluding portion of the Secretary's report was then read, giving an account of the Lectures which had been delivered, and other miscellaneous operations. The Secretary then gave an account of some experiments made with the Smithsonian apparatus by Mr. Espy during the past year, and the connection which has existed between this gentleman and the Institution. An appropriation has been made for several years past by Congress for Meteorology, out of which Mr. Espy has been paid. The appropriation was under the direction of the Secretary of the Navy who, in 1848, directed Mr. Espy to co-operate in his labors with the Smithsonian Institution.

Mr. Lenox presented a communication from Mr. Seaton recommending

the placing of a bell in one of the towers of the Smithsonian building and stating that a very valuable town clock could probably be obtained from the Treasury Department.

On motion of Mr. Fitch, it was

Resolved, That Mr. Lenox be appointed a committee to inquire into and report upon this proposition.

The Board then adjourned to meet again at the call of the Secretary.

THURSDAY, FEBRUARY 27, 1851.

The Board of Regents met this evening at 6 o'clock in the ante-room of the Senate Chamber.

Present: Messrs. Bache, Colcock, Davis, Fitch, Lenox, Mason, Pearce and Totten.

In the absence of the Chancellor, Mr. Pearce was called to the Chair.

The proceedings of the last meeting were read.

Mr. Bache, from the Executive Committee, offered the following resolution which was adopted:

Resolved, That during the year 1851, the sum of twenty-five thousand dollars be and is hereby appropriated to be expended under the direction of the Secretary, and with the advice of the Executive Committee for the expenses of the Institution, and to carry out the several parts of the programme of organization.

On motion of Mr. Mason, it was

Resolved, That the report of the Secretary and of the Executive Committee be adopted and form parts of the report of the Regents to Congress.

On motion of Mr. Colcock, it was

Resolved, That the Chancellor and Secretary be authorized to make the annual report of the Regents to Congress.

A bill was presented to the Board from W. Fischer for stationery purchased in 1847 and 1848, on account of the Executive and Building committee, prior to the present system of keeping accounts.

On motion of Mr. Fitch, it was referred to the Executive Committee for examination and if found correct, for payment.

The Secretary called attention to the statement in the report of the Executive Committee, that in the examination and re-arrangement of the accounts of the Institution, there had been found a few cases in which payment had been made in accordance with the spirit of the resolutions of the Board, but which could be referred to no special appropriation.

On motion of Mr. Fitch, it was

Resolved, That these accounts be referred to the Executive Committee for examination, and if deemed correct, for approval.

The Secretary informed the Board that it was necessary to publish a new edition of the programme of organization and suggested the propriety of making a few verbal alterations in the text, and in the sentence beginning as follows:

“Rewards [consisting of money, medals, &c., offered for original memoirs.”]

Of striking out the words included in brackets, which was agreed to.

On motion of Mr. Mason, it was

Resolved, That the Secretary be authorized to employ an accountant at an annual salary of two hundred dollars, and to assign his duties, and that

there be paid to Wm. B. Randolph, two hundred dollars for the arrangement of the accounts to date as reported.

On motion of Mr. Bache, it was

Resolved, That the Secretary be authorized to appoint an agent abroad to conduct the exchanges of the Institution, with a salary not to exceed one hundred and fifty dollars per annum.

Mr. Davis submitted the following resolution, which was adopted:

Resolved, That the Executive Committee be requested to inquire into the expediency of providing buildings for the residences of the officers of the Institution on the Smithsonian grounds, or other convenient location, if they deem expedient to report plans and estimates for such buildings to the Board at their next meeting.

Mr. Lenox, to whom was referred the subject of procuring a clock and bell for the Institution, reported that the use of a clock could be obtained free of expense to the Institution, provided a bell of a large size could be arranged in connection with it, in one of the towers of the Smithsonian building; also, that he thought it probable that the corporation of the city of Washington would defray one half of the cost of such a bell, provided that the Institution would pay the other.

Mr. Mason then offered the following resolution, which was agreed to.

Resolved, That the Secretary be authorized to purchase a bell, to be placed in one of the towers of the building to be attached to a clock, provided that the purchase be made in association with the authorities of the city of Washington, and that the size and tone of the bell be approved of by the Executive Committee and the said authorities, the sum to be paid on the part of this Institution, not to exceed five hundred dollars.

The plan of Mr. Downing for the improvement of the public mall, including the grounds of the Smithsonian Institution was exhibited to the Board.

On motion, the Board then adjourned *sine die*.

APPENDIX No. I.

FOREIGN DISTRIBUTION, OF VOL. I., OF SMITHSONIAN CONTRIBUTIONS TO KNOWLEDGE.

SWEDEN.

LUND — The University Library.

STOCKHOLM — *Kongliga Svenska Vetenskaps Akademien. (Royal Swedish Academy of Science.)

*Vitterhets Historie och Antiquitets Akademien.

UPSALA — *Svenska Akademien. (Swedish Academy.)

*The University Library.

NORWAY.

BERGEN — Bergen's Museum.

CHRISTIANIA — Library of the University.

DENMARK.

- COPENHAGEN — Kongelige Nordiske Oldskrift Selskab. (Royal Society of Northern Antiquarians.)
 Kongelige Danske Videnskabernes Selskab. (Royal Danish Society of Science.)
 Royal Library.

RUSSIA.

- DORPAT — The Imperial Observatory.
 MOSCOW — Société Impériale des Naturalistes.
 ST. PETERSBURG — *Académie Impériale des Sciences.
 *Imperial Public Library.
 Imperial Mining department.
 PULKOWA — *The Imperial Observatory.

HOLLAND.

- AMSTERDAM — *Hollandsche Instituut der Wetenschappen, Letterkunde en schoone Kunsten. (Holland Institute of Sciences, Literature and the Fine Arts.)
 HAARLEM — Hollandsche Maatschappij der Wetenschappen. (Holland Society of Sciences.)
 LEYDEN — Académie des Sciences.
 ROTTERDAM — *Bataafsch Genootschap der praefondervindelyke Wysbegeerte. (Batavian Society of Experimental Philosophy.)
 UTRECHT — *Academia Rheno-Trajectina.
 VLISSINGEN — *(Flushing,) Zeeuwsche Genootschap der Wetenschappen (Zealand Society of Sciences.)

AUSTRIA, GERMANY AND PRUSSIA.

- BERLIN — *Königliche Akademie der Wissenschaften. (Royal Academy of Sciences.)
 *Royal Library.
 BONN — University Library.
 BREMEN — *City Library.
 BresLAU — *Academia Leopoldina Carolina natural curiosorum.
 DRESDEN — *Royal Public Library.
 ERLANGEN — University Library.
 FRANKFURT AM MAIN — Senckenbergische Naturforschende Gesellschaft. (Senckenberg Society.)
 FREIBERG — Royal Mining Academy.
 FREIBURG — *University Library.
 GIESSEN — University Library.
 HALLE — University Library.
 HAMBURG — Public City Library.
 HEIDELBERG — University Library.
 JENA — *University Library.
 KARLSRUHE — *Grand Ducal Library.
 KÖNIGSBERG — *University Library.
 LEIPZIG — City Library.
 University Library.
 Königliche Sächsische Gesellschaft.
 Fürstliche Jablonowski'sche Gesellschaft.

- MARBURG — Marburgische Naturforschende Gesellschaft.
University Library.
- MUNICH — *Königl. Baierische Akademie der Wissenschaften. (Royal Bavarian Academy of Sciences.)
Royal Court and City Library.
- PRAGUE — *University Library.
Königl. Böhmisches Gesellschaft der Wissenschaften. (Royal Bohemian Society of Sciences.)
*Böhmisches Museum.
- PESTH — *University Library.
*Ungarische Gelehrte Gesellschaft.
- STUTTGART — Royal Public Library.
- TÜBINGEN — *University Library.
- VIENNA — *K. K. Akademie der Orientalischen Sprachen.
*Imperial Library.
*University Library.
*Kaiserliche Akademie der Wissenschaften.
- WÜRZBURG — *University Library.

BELGIUM.

- BRUXELLES — Académie Royale des Sciences, des Belles Lettres et des Beaux Arts.
Royal Observatory.
- GHENT — University Library.
- BRUGES — *Société des Sciences Naturelles.
- LIEGE — Société Royale des Sciences.
- LOUVAIN — *Academia Lovaniensis.

FRANCE.

- ANGERS — *Société d'Agriculture, Sciences et Arts
- BORDEAUX — *Académie des Sciences, Belles Lettres et Arts.
- CAEN — *Académie des Sciences, Arts et Belles Lettres.
*Société Linnéenne de Normandie.
- DIJON — *Académie des Sciences, Arts et Belles Lettres. ..
- LILLE — *Société des Sciences, de l'Agriculture et des Arts.
- LYON — *Société d'Agriculture, Histoire Naturelle, et Arts Utiles.
- MARSEILLE — *Académie des Sciences, Lettres et Arts.
- MONTPELLIER — *Société Archéologique.
- PARIS — *L'Institut de France.
*Société des Antiquaires.
* " Asiatique.
* " de Géographie.
* " Géologique.
* " Française de Statistique Universelle.
* " Philomatique.
* " de l'Ecole des Chartes.
*National Library.
*Library of the Jardin des Plants.
*L'Institut Historique.
*L'Ecole des Mines.
*Société Ethnologique.
*Library of the City of Paris.
- STRASBOURG — *Société des Sciences, Agriculture et Arts.
*Académie des Sciences Naturelles.

SWITZERLAND.

BASLE — Naturforschende Gesellschaft.

Antiquarische Gesellschaft.

BERNE — Schweizerische Gesellschaft für die Gesammten Naturwissenschaften.

GENEVA — Société de Physique et d' Histoire Naturelle.

NEUCHÂTEL — Société des sciences Naturelles.

ZÜRICH — *Naturforschende Gesellschaft.

Antiquarische Gesellschaft.

ITALY.

BOLOGNA — *Istituto delle Scienze ed Arti Liberati.

CATANIA — *Accademia Gioenia di Scienze Naturali.

FLORENCE — *Accademia del Cimento.

*Magliabecchian Library.

LUCCA — *Reale Accademia Lucchese di Scienze, Lettere ed Arti.

MILAN — *Imperiale Regio Istituto del Regno Lombardo-Veeto.

MODENA — *Società Italiana delle Scienze.

NAPLES — *Reale Accademia delle Scienze, e Belle Lettere.

PADUA — *Accademia di Scienze, Lettere, ed Arti.

PISA — *University Library.

PALERMO — *Royal Academy of Sciences.

ROME — *Accademia Romana di Archeologia.

*Library of the Vatican.

*Accademia dei Lincei.

TURIN — *Accademia Reale delle Scienze.

VENICE — *Library of San Marco.

PORTUGAL.

LISBON — *Academia Real dos Sciencias.

SPAIN.

MADRID — *Real Academia Espanola.

* " " de la Historia.

*Academia de los Sciencias Naturales.

GREAT BRITAIN AND IRELAND.

BELFAST — *Natural History and Philosophical Society.

CAMBRIDGE — Cambridge Philosophical Society.

*University Library.

CORNWALL — *Royal Geological Society.

DUBLIN — Dublin University Philosophical Society.

Royal Irish Academy.

*Library of Trinity College.

EDINBURG — *Royal Society.

Royal Scottish Society of Arts.

Royal Observatory.

*Library of Faculty of Advocates.

Society of Antiquaries of Scotland.

GLASGOW — *University Library.

GREENWICH — Royal Observatory.

LONDON — Royal Society.

Royal Astronomical Society.

Royal Asiatic Society.

Royal Geographical Society.

*Royal Institution.

*Society of Antiquaries.

*Society for Encouragement of Arts, Manufactures and Commerce.

Linnæan Society.

Geological Society.

*Institution of Civil Engineers.

*Zoological Society.

Entomological Society.

Statistical Society.

*Microscopical Society.

*Ethnological Society.

British Archæological Society.

*British Museum.

*Library of House of Commons.

*Horticultural Society.

Chemical Society.

Archæological Institute of Great Britain and Ireland.

*Board of Admiralty.

LEEDS — *Philosophical and Literary Society.

MANCHESTER — *Literary and Philosophical Society.

OXFORD — *Bodleian Library.

Radcliffe Observatory.

ST ANDREWS — *Library of the University.

GREECE.

ATHENS — *University Library.

TURKEY.

CONSTANTINOPLE — *Library of the Sultan.

AFRICA.

GRAND CAIRO — *The Egyptian Society.

ASIA.

ALLAHABAD — *Mission College.

BATAVIA — *Bataviaasche Genootschap van Konsten en Wetenschappen.

BOMBAY — *Literary Society.

*Geographical Society.

CEYLON — *Asiatic Society.

HONG KONG — *Asiatic Society of China.

MADRAS — Literary Society.

MANILLA — *Royal Economical Society of the Philippine Islands.

WEST INDIES AND SOUTH AMERICA.

BOGOTA — *Sociedad Economica de Amigos del Pais.

CARACAS — *Sociedad Economica de Amigos del Pais.

HABANA — *Real Sociedad Economica.

RIO JANEIRO — *Imperial Brazilian Historical Society.

These Institutions may be summed up, as follows :

Sweden,-----	5
Norway,-----	2
Denmark,-----	3
Russia,-----	6
Holland,-----	6
Austria Germany, and Prussia,-----	37
Belgium,-----	6
France,-----	25
Switzerland,-----	7
Italy,-----	16
Portugal,-----	1
Spain,-----	3
Great Britain and Ireland,-----	41
Greece,-----	1
Turkey,-----	1
Africa,-----	1
Asia,-----	8
West Indies and South America,-----	4
Total -----	173

The returns received in exchange from these Institutions, up to the 1st of January 1851, are as follows.

Folio and quarto Volumes,-----	132
Octavo Volumes,-----	138
Parts of volumes and tracts in quarto and octavo,-----	608
Total -----	878

From some of the above mentioned Institutions, no returns have yet been received. These will be found marked with an asterisk. From many so marked, however, an exchange is shortly expected, while from others, such as Libraries, which publish no transactions, nothing can be looked for. Even here, however, duplicate volumes, as has already happened in several instances, will occasionally be transmitted. Many of the Universities on the continent have forwarded the theses of their graduates, and other miscellanea. It must also be observed, that the period at which it was found possible conveniently to transmit volume I. of Smithsonian Contributions to France, Italy, Spain, and Portugal, has been so recent as to render the reception of any returns up to the present date impossible.

It may be proper to add, that suitable occasions of forwarding to some of the above mentioned societies, have not yet occurred, although shortly expected. This is the case in regard to some of the Asiatic societies, the Egyptian society of Grand Cairo, and those of the West Indies and South America.

APPENDIX No II.

NEW YORK, December 2, 1850.

MY DEAR SIR: The ship "Brewster" has just arrived from the Pacific, bringing six monuments in addition to those which I shipped via. San Juan de Nicaragua, for the Institution, and which I have directed to be immediately forwarded to Washington. I shall avail myself of the opportunity afforded by my proposed visit to the Capital in January next, to number and catalogue both these and the other Central American relics which I have already sent. In the meantime, I am unable to refer to the individual figures and objects in an intelligible manner. I may nevertheless observe that the finer specimens of Aboriginal Art, which I discovered in Nicaragua, were of too large size to be removed under present circumstances. Should the steamers which have been sent out succeed in ascending the San Juan, and entering lake Nicaragua, some of the monuments which exist on the islands in that lake, might be obtained without much difficulty, and would constitute very interesting and important features in the proposed Smithsonian collection of American antiquities. Two of the statues which I have sent to the Institution, one from the island of Zapatero, in lake Nicaragua, where once existed one of the most imposing aboriginal temples of the country. Here, amongst the ruins of the *teocalli* or high places of the former inhabitants, I found fifteen entire statues, besides the fragments of many others; several broken sacrificial stones, &c. I was unable to remove but two of the smallest and rudest, but I have accurate drawings of all. The largest statue amongst those which I have sent you, and which is carved in black basalt, was obtained from the island of Momotombita, in lake Managua, where there seems also to have been a temple or sacred place. The figure with the sphynx like head dress is also from the same locality, whence a great number of sculptures have been taken at various times, and planted at the corners of the streets in the towns, or sent abroad. Within the recollection of persons now living, there were some twenty or thirty of these figures existing at one place on the island, arranged in the form of a square, the faces looking inward. One or two of the other statues were dug up for me by the Indians of the Pueblo of Subtiaba near Leon, having been buried for a great number of years, and the locality carefully concealed. They are somewhat mutilated, showing in their broken features, the zeal of the priests who followed in the armies of Gil Gonzalez de Avila and Cordova. A small group of these monuments exists in the depths of the forest midway between Leon and the Pacific, which is still secretly visited by the Indians, for the performance of dances and other rites pertaining to their primitive religion.

These monuments, but particularly those which exist in and around lake Nicaragua, and which, as works of art, are superior to those found elsewhere, are of high value in an archæological point of view, because they furnish conclusive collateral evidence of the truth of the statement of Oviedo, (who visited Nicaragua in 1529,) that a large part of the inhabitants of the country were Mexicans, i. e. of the same stock with the Aztecs and the other nations inhabiting the valley of Anahuac. I was

able at the first glance, to recognize in some of these statues, the representations of several of the gods of the Mexican Pantheon. Among these was Tlalocthe, God of Rain, and the second of the Aztec Triad, corresponding in his essential attributes with Vishun of the Hindu Mythology.

The small figure resembling some animal *couchant* was, until very recently, preserved on a remarkable rock on the side of the volcano of Omatepec, and regarded with high veneration by the Indians. It was only after many years of search that the priests were able to find and remove it. The granitic vase, distinguished by the ornaments, called *grecques* by Humboldt, (and which characterize the ruins at Mitla in Mexico,) was dug up near the city of Nicaragua. The spot had been a cemetery of the ancient inhabitants. Another relic of the same material, and with a like style of ornament, accompanies the vase, and was found in the same neighborhood. It seems to have been designed as a pedestal for a small statue.

I have several of the funereal vases of the ancient inhabitants, in which the bones and ashes of the dead were packed after the decomposition of the flesh or after burning. It is a singular fact that all these vases were modelled after the human skull. I will send these as soon as the drawings of them are finished.

I may mention that the largest and most elaborate monuments which fell under my notice in Nicaragua, exist in the little island of Pensacola, near the base of the extinct volcano of Momobacho. They weigh a number of tons each, and are distinguished as being wrought from blocks of sand stone, a material which is not found on the island, nor, so far as I could learn, within many miles of it, on the main land.

I shall be happy to contribute whatever monuments of the past, or relics of aboriginal art which I possess, or may hereafter collect, towards forming a National Archæological Museum, under the single stipulation that they shall have a specific place assigned them in the Institution, and that my classification when finally made, shall not be disturbed. You know that I have long cherished the plan of forming a grand collection, which should illustrate the arts of the aboriginies of every part of the continent, but more particularly of our own country. Small and detached collections, such as individuals may be able to form, can serve no good purpose in the way of comparison and mutual illustration, and are always liable to be destroyed by accident, or dispersed, and, piece by piece, irretrievably lost, and I am sure, when it comes to be known that a place has been set apart for these things in the Smithsonian Institution, most persons possessing collections would not hesitate to surrender them to augment the central stock. And if our public agents in foreign countries, our army and naval officers in frontier or foreign service, and our traders generally residing abroad, were properly informed that a collection of this kind was going on, and that the necessary cost of procuring and transmitting monuments or relics of interest would be reimbursed them; if this were done, I feel sure that an American Archæological Museum, worthy of our age and country, would soon grow up. It is a fact not at all creditable to us, that we have no public collection of this kind worthy to be mentioned, in the United States, while some of the museums of Europe are really rich in relics of aboriginal American art. M. de Longperier, conservateur des Antiquités of the Louvre, has recently published a catalogue of American antiquities,

contained in that museum, *extending over one hundred and thirty octavo pages*, and relating to nearly a thousand specimens, some of them of great interest and value. The fact carries its own application with it. Craving your indulgence for this rambling letter,

I am sir, your obedient servant,

E. GEO. SQUIER.

Professor JOSEPH HENRY, *Secretary*
Smithsonian Institution, Washington.

APPENDIX—No. III.

REPORT OF COMMISSIONERS TO EXAMINE THE PLAN
FOR FORMING A GENERAL STEREOTYPE CATALOGUE
OF PUBLIC LIBRARIES IN THE UNITED STATES.

COPY OF A LETTER ADDRESSED SEVERALLY TO

Hon. EDWARD EVERETT, of Cambridge,
CHARLES FOLSOM, Esq., Librarian of the Boston Athenæum,
GEORGE LIVERMORE, Esq., of Boston,
JOSEPH G. COGSWELL, Esq., Superintendent of the Astor Library, N. York,
S. F. HAVEN, Esq., Librarian of the American Antiquarian Society, and
Rev. EDWARD E. HALE, of Worcester.

SMITHSONIAN INSTITUTION,

August 16, 1850.

DEAR SIR: The Smithsonian Institution desirous of facilitating research in literature and science and of thus aiding in the increase and diffusion of knowledge, has resolved to form a general catalogue of the various libraries in the United States, and I submit to you for examination the plans proposed by Professor Jewett, Librarian of the Institution, for accomplishing this object.

First, A plan for stereotyping catalogues of libraries by separate titles in a uniform style.

Second, A set of general rules to be recommended for adoption by the different libraries of the United States in the preparation of their catalogues.

Professor Jewett will present to you his plans in person, and I beg leave in behalf of the Executive Committee of the Institution to request that you will give this subject that attention which its importance demands and report

First—The practicability of the plan presented.

Second—On the propriety of adopting the rules proposed.

You will also confer a favor on the Institution by giving any suggestions with regard to the general proposition of forming a catalogue of all the libraries in this country.

I remain respectfully, your obedient servant,

JOSEPH HENRY, *Secretary,*
Smithsonian Institution.

REPORT OF THE COMMISSIONERS UPON THE GENERAL CATALOGUE.

The undersigned were requested in the month of August last, by a letter from Professor Henry, written on behalf of the Executive Committee of the Smithsonian Institution, to take into consideration the subject of a General Catalogue of the public libraries of the United States, proposed to be formed under the auspices of the said Institution, and more especially the plan proposed by Professor Jewett, Librarian of the Institution, for accomplishing that object.

Having consented to act as Commissioners for the above named purpose, the subscribers had several interviews with Professor Jewett, in the months of September and October, at which he submitted to them

1. A plan for stereotyping catalogues of libraries by separate movable titles of the books contained in them, and
2. A set of general rules to be recommended for adoption by the different public libraries in the United States, in the preparation of their catalogues.

Professor Jewett's plan for stereotyping titles on separate plates is unfolded at considerable length, in a paper read by him, in the month of August last, at the annual meeting of the American Association for the Advancement of Science, held at New Haven. This paper was published in the *Boston Traveller* for the 26th of September. It is herewith subjoined, and the undersigned request that it may be considered as a part of their report.*

For a full view of the advantages, both economical and literary, anticipated from the adoption of Professor Jewett's plan, the undersigned would refer to the valuable and interesting paper just named. They will allude briefly to a portion of these advantages.

The most important of them, perhaps, will be the economy of time, labor, and expense, required for the preparation of a new edition of a catalogue, to include the books added since a former edition was published. On Professor Jewett's plan, when the catalogue of a library is published, it will be necessary to strike off only so many copies, as are needed for present use. When the additions to the library have become so considerable as to make another edition of the catalogue desirable, or in lieu thereof, a supplementary catalogue, (always an unsatisfactory and embarrassing appendage,) the new titles only will be stereotyped and inserted in their proper places among the former titles, all the titles being on movable plates. The pages of the new edition will thus be made up with convenience, and every book in the library will stand in its proper place in the catalogue. This process will be repeated as often as the growth of the library may make it necessary.

In this way, not only will the plates used in a former edition, be available for each subsequent edition, but when the plan is fairly and extensively in operation, most of the titles of books added to any given library of

* This paper is substantially re-printed in the report of the Librarian for the present year.

whose catalogue a new edition is required, will, in the meantime, have been cast for some other catalogue, and thus occasion no new charge for any subsequent use, as far as the expense of casting the plates is concerned. The infant state and the prospective rapid increase of the public libraries in the United States, as well as the frequent founding of new libraries, give great interest to this feature of the plan.

Another advantage of the proposed plan would be of the following nature: The libraries in any country, (to some extent, indeed in all countries,) consist partly of the same books. Professor Jewett states, that in the catalogues of the public libraries of the United States, possessed by the Smithsonian Institution, there are embraced at least four hundred and fifty thousand titles. He estimates, however, after a laborious comparison, that among these there will not be found more than one hundred and fifty thousand different titles. It follows, that, if the plan proposed had been applied to the publication of these catalogues, two thirds of the expense of printing them, as far as the cost of plates is concerned, would have been saved by incurring the extra expense of stereotyping the remaining third according to this plan. The economy to each particular library, in the expense of plates for its catalogue, will be in proportion to the number of books which it may contain in common with any other library, whose catalogue has been already stereotyped on this plan. The title of the same book, in the same edition, will of course be cast but once, and will thenceforward serve for the catalogue of every library possessing that book, which may enter into the arrangement.

A third advantage resulting from this plan will be the facility with which a *classed* catalogue, either of a whole library or any department of it, might be furnished at short notice, without the expense of writing out the titles or of casting new plates, but by the simple indication of the selected titles, in the margin of a printed alphabetical catalogue.

Finally, the plan of necessity, requires, that the titles of the books in the libraries, included in the arrangement, should be given on uniform principles and according to fixed rules; an object of no small importance to those who consult them.

These and other incidental advantages, which would result from the adoption of his plan of separate stereotype plates for the titles of books in public libraries, are pointed out by Professor Jewett in the memoir above referred to, and the undersigned are of opinion that he has not overrated their importance. In proportion as the plan is concurred in by the public institutions and individuals possessing valuable collections of books, the preparation of a general catalogue of all the libraries in the country becomes practicable, accompanied by references from which it would appear in what library or libraries any particular book is contained.

The undersigned became satisfied, in the course of their conferences with Professor Jewett, that the plan in all its parts is practicable. In connection with the explanation of its mechanical execution, specimens of stereotype plates of separate titles, made up into pages, were submitted to them in common type metal, in electrotypes, and in a newly invented composition, the use of which, it is thought by its inventor, would be attended with great economy in the cost of plates. The undersigned examined these specimens with much gratification and interest, but they did not feel themselves competent from their limited opportunities of enquiry, nor did they regard it as falling within their province, to form an opinion

on the comparative merits of these processes. They feel satisfied that no important mechanical difficulty is to be apprehended in carrying the plan into full effect.

A majority of the undersigned devoted themselves for several successive meetings to the careful consideration of the set of rules submitted to them by Professor Jewett, for the uniform preparation of the titles of books. This is a subject which has of late received much attention from bibliographers, and is of great importance in the formation of the catalogues of public libraries. Professor Jewett's rules combine the results of the experience of those who have given their attention to the subject in the principal libraries of Europe, especially of the British Museum, together with the fruits of his own experience and study. These rules appeared to the undersigned to be drawn up with judgment and care. A few amendments were recommended by the undersigned, and a few additions proposed, but they are prepared to signify their approval of the system substantially as submitted to them. It is contained, as amended by the undersigned, in conference with Professor Jewett, in the paper marked B,* which they beg leave also to make a part of their report.

In order that a beginning may be made in the execution of the plan, under circumstances highly favorable to its success, the undersigned take the liberty of suggesting, that it would be advisable for the Regents of the Smithsonian Institution to obtain the requisite authority to prepare a catalogue of the library of Congress on the above described plan. A catalogue of this library is now very much wanted. Originally constructed on a defective plan, and continued by the publication of a large number of supplements, it is now almost useless; and, as the library increases, it becomes daily more so. The preparation of an alphabetical catalogue has in this way, become a matter of absolute necessity for the library itself; while it affords the best opportunity for commencing an arrangement by which the various libraries of the country will be brought into a mutually beneficial connection with each other, on the plan proposed by Professor Jewett.

The undersigned consider the permanent superintendence of this plan to be an object entirely within the province of the Smithsonian Institution. They are satisfied that it will tend both to the increase and the diffusion of knowledge, and they therefore hope that the sanction of the Regents and of Congress will be given to the undertaking.

(Signed,)

EDWARD EVERETT,
JOSEPH G. COGSWELL.
CHARLES FOLSOM,
SAMUEL F. HAVEN,
EDWARD E. HALE,
GEORGE LIVERMORE,

Boston, 26th October, 1850.

* These rules with copious explanations and examples will soon be published in a pamphlet form. It was found impossible to prepare them to be printed with the present report.

APPENDIX — No. IV.

JOURNAL OF AN EXPEDITION TO THE MAUVAISES
TERRES AND THE UPPER MISSOURI IN 1850:

BY THADDEUS A. CULBERTSON.

[As already mentioned, Mr. Culbertson went from St. Louis to St. Josephs in a steamboat. He there, with his brother, Alexander Culbertson, Esq., took a carriage, and accompanied by some attendants proceeded to Fort Pierre, along the eastern bank of the Missouri. His narrative as herewith presented, commences at a point some miles below Fort Pierre]

Saturday, April 27, 11 A. M.—Yesterday was an exceedingly unpleasant day to travel; when we arose we found a violent north wind blowing, but as soon as we had breakfasted we were off on the dreary, cheerless prairie. We saw but little wood, but as the road was hilly, ponds were frequent; about ten o'clock we crossed a little stream that gave us some trouble on account of the mud; cold as the day was, the Indians waded through without hesitation. About twelve o'clock we came into a very hilly section, the land was cut up into steep hills and deep ravines with a little scrubby timber in them. At one o'clock we reached the spot where the Indians had been certain of meeting Old Eagle, who had been there hunting buffalo, but Old Eagle was not to be found; he had been there, but had gone, and now our Indians looked sad; they had left a good place for buffalo, and had come here where there apparently were none. We had also depended on getting some dried meat here, and were at first apprehensive of being short of provisions, should bad weather overtake us; but a review of the larder showed a supply for eight or ten days.

There was every appearance of a severe storm, and occasionally it would snow terribly, but bad as our situation promised to be, we were thankful that it was no worse; had these appearances of a storm overtaken us the night before, when there was not a stick of wood within two miles, we might have been filled with real apprehension for our safety; but here, we had wood, water and grass convenient, and we were in a cooley, well sheltered from the storm.

The afternoon passed away rapidly. We had a good fire in the lodge, and had for dinner a most delicious piece of meat roasted before the fire. About eight o'clock we went to rest in our wagon, anticipating a day of cheerless rest on the morrow, but Providence was kinder to us than we expected, and about four o'clock this morning, we were awakened by the stir around indicating a day of travel.

We were off by half-past five o'clock, and soon crossed Choutain creek, on which we had been encamped. It is a very small stream. Our course thus far to-day has been over level prairie, since we left the creek and its forks. No timber in sight, and water very scarce—buffalo plenty. I forgot to mention that just as we were leaving the river A'Jacques, a very large white wolf came walking leisurely, not very far from us—A. shot at her but missed, when the wolf scampered off. It was pure white and quite a beautiful animal.

Sunday, April 28.—Yesterday after dinner we traveled about five hours and encamped on the shore of Lake Andy, a long and large lake

about ten miles from the Missouri, and about sixty from the A'Jacques. Our road was over fine prairie land, and there was more appearance of grass than we had previously seen. I put in my book two specimens of a small weed, the first that I had seen. During the day, I got also three specimens of animals; one prairie squirrel whose skeleton I desired; one prairie dog, whose skull I will keep, and one salamander,* which was dried up—it was found on the shore of the lake. This prairie dog was shot by A. in the afternoon in the first village that we have seen; he shot at two others, but did not get them; even when wounded they are so exceedingly quick in their motion that a person can scarcely get them.

This morning we were off before five o'clock; it has been a beautiful clear day and very fine for traveling, except a strong head wind. The road has been very hilly, but is now less so; we have seen no timber except a very few small trees; where we are camping there are some thorn bushes and three or four small trees; but even these are better than yesterday noon's camp, where we had fire of buffalo dung. This morning the cooley's have been filled with snow four or five feet deep in places, and distant hills appear covered with it.

Tuesday, April 30.—Here we are at eight o'clock A. M., at our camp on the American Fork. On Sunday evening about sunset, after a long day's march, we reached a good camp on Cow creek. This is a small stream, the approach to it is over very steep, irregular hills, covered with stones, not rocks; it is better timbered than any stream we had seen for days. During the night we were awakened by the roaring of the wind and the beating of snow against the carriage. Of course we expected to find the ground covered with snow in the morning, but to our agreeable surprise, the sun arose clear and the sky almost cloudless. We had breakfasted, and were on the march by half-past four o'clock. The road was over gently rolling prairie, without any wood, but with frequent ponds of water, probably dry in the summer. About half-past nine o'clock we reached the Bute Bijoux, which, on Sunday morning we had seen far off covered with snow. It is a clump of hills rising out of the plain, very irregular and covered with rocks which have the appearance of light colored limestone, at a distance.

There we found some wood, water and grass, and rested two hours for dinner. It is eighteen miles from that to the American Fork, and as that would make a forced march, it was not without some hesitation that we determined to go on. Our horses have had no provender but the dry grass of the prairies, and are very much weakened by their long journey and the cold. However, we all felt so anxious to get through, that we started. Our route lay across a wide prairie, without wood for many miles, and covered with unburnt grass. We found it very warm when we first started, but the wind from the north soon blew more violently than it had before done from the east, and in a few hours the weather became intensely cold.

About four o'clock we discovered Indians at a distance, by whom we were also observed, but they mistook us for buffalo. Soon two scouts reached in full gallop. We went on with them to their lodges of which there were several, and there appeared to be a very friendly conversation between A. and the men for a short time, but we soon passed on. At our arrival, men, women, children, dogs and horses all came out to look.

* A large undescribed species of the Genus *Ambystoma*.

We still continued our fatiguing march over the dreary prairie, but at length, as night came on, we found it would be too fatiguing to go to the Fork, and we encamped under a little hill and beside a pond. No wood, however, was seen, and the men scoured the country for buffalo dung; when found it would not burn, and we had to break up two of our boxes to start the fire and cook our supper. I ate heartily and went to bed immediately, for I was fatigued and there was no comfort outside. We were warm in the buggy and slept soundly till about half-past four o'clock, when we were up and off. We are now twelve miles from the first trading post belonging to Fort Pierre.

Wednesday, May 1.—When I made my entry yesterday, it was with the pleasing anticipation of spending the night at the Yankton Trading House; but travelers must not calculate too certainly on every thing turning out as they desire; the previous part of our journey might have taught us this, and if it did not, the present lesson certainly has impressed it on my mind. We had a beautiful road over rolling prairie and a fine day; every thing seemed to favor us, and as we moved along fatigued by our previous long marches, we felt rejoiced that at least a night's rest was before us. Soon the steep hills, that indicate the proximity of a river, were reached; on passing these, our eyes were delighted by a most picturesque scene; beyond the little river, at the foot of the hill, on ground gradually rising were pitched probably two hundred Indian lodges, with all that irregularity and those wild appurtenances that well become a scene in the wilderness. All that was wanting to make it as lovely as possible, were the green grass on the ground and the summer dress of the trees. The hills over which we were passing, were very steep and very irregular, and some of them had the appearance of volcanic action. I picked up a stone from one of them, that looked as though it had once been melted, and the hill was covered with such.

We soon reached the stream, called Crow creek I believe, and instead of it being a small rivulet easily crossed, it was rolling along with great velocity, and far out of its banks. Here we were put to a stand again, and all we could do was to encamp and wait for the making of a skin boat with which to cross. Meanwhile a number of Indians had come in, some of them swimming the river, cold as it was, and something had to be cooked for them; fortunately they are content with very plain fare, which they ate with equal simplicity.

It was very amusing to see the strange mixture of civilized and savage costume exhibited in the dress of some of them; one fellow particularly struck my attention—he had met us on the hill with a friendly shake of the hand and “how do,” “how do.” All his garments consisted of a short shirt and a waistcoat with the usual Indian clout; his nether limbs were the clothes that nature had made for them—he was full of talk, and very officious, and when the mush was given out, he always made it convenient to the helper by eating out of the pot between times. During the afternoon many more young fellows came across, swimming the rapid, cold stream and remaining all day with scarcely any clothing. They were all anxious for horses, and two of them had the traders' receipt for thirty robes. They of course must be supplied, and soon one of them was capering around us on a fine bay horse, which he had selected. The horse dealing was carried much after the same fashion as in the States; all by-standers had a great deal to say and there appeared to be much good humor on all hands.

During the afternoon the hands from the post had been at work on the boat — we expected to go to the houses that night, but when the boat was completed it was a proof of the old adage — most haste, less speed — the boat would not answer the purpose, although it was coaxed across the stream. We therefore sat down quietly to again spend the night in our good wagon. Many of the Indians stayed all night; as I watched the different countenances around the fire, I was struck with the fact, that the circle of faces presented the same variety as to expression, intelligence, &c., as would be exhibited by an equal number of Americans—in none did I notice the expression of ferocity. One young man in particular, attracted my notice; he had a very intellectual mouth and expression and stood by himself with the marks of deep thought on his countenance—his appearance interested me greatly and at once suggested to me my friend W. H. of Princeton, but at the same moment my eye rested on a common feather, picked up probably on the prairie, stuck in his head for ornament, and I could not refrain from smiling at the ridiculous contrast between my intelligent young friend and the thoughtful Indian. Poor fellow! perhaps if he had an opportunity for study he would ornament his head with a more honorable feather than the one that pleased his fancy yesterday.

Monday, May 6.—Every thing was crossed safely over the river, and by evening we were all safe and snugly fixed at Randell's. The Indians had bought all our horses that were for sale, and they came to the houses with us. There a feast was prepared for them, and they all appeared well satisfied. A feast for the Indians is a very simple affair—a little coffee and some gammon, or mush served in the simplest style is sufficient for them. There were sixty or seventy gathered at this one; before it was ready they came in and went out, and sat talking, joking and passing around the pipe, just as a company of whites spend their time while waiting for the announcement of dinner.

When the things were prepared, the two kettles were placed in the middle of the floor, and each one was furnished with a pan of some kind to eat in, but they got no spoons or anything to answer the same purpose. A. then made quite a long speech, not however, standing up, but sitting on a bench with his hat on his head and pipe in his mouth. One of the old men then arose, shook hands with him, resumed his seat on the floor and made quite a long and animated speech. I could not understand a word, but was much interested by his earnest manner. Both of the speeches were frequently interrupted by cries of "how, how," corresponding, I suppose to our "hear, hear," indicating approbation. One of their number then volunteered to help out, and he first served the coffee giving to each his portion which was received with a "how," thank you. Then the gammon was served in the same way, and supped from the dishes to the great risk of the tongue and throat as I thought. When this was going on Randell spoke, and with great animation. I was surprised—he is a Canadian Frenchman, and a very common man but he "talked like a lawyer," with great earnestness and animation. Afterwards the Indians gradually dispersed, and we sat down to a supper of coffee, bangs (corn cakes,) and honey; for the whites do not generally eat when they give a feast to the Indians. I could not but think how amusing it would be to my friends at home to see us enjoying this *feast*. We had no forks and had to use the knives we carried in our belts.

In the morning we were off about half-past six o'clock, and hoped to

reach Fort Pierre on Friday evening, but it was beyond our power. Our men had been furnished with Indian horses and we had put some other mules into the cart, giving our mules their old place in the buggy. The road was well marked as it is much traveled and is good, passing over rolling prairie. Timber and water scarce. The wind blew quite violently which increased the fatigue of the travel. About two o'clock we stopped for dinner on a high hill where we found plenty of wood left by some Indians. After dinner the wind made the traveling so unpleasant that we camped early; our camp was in a cooley through which runs a small stream called the Chain of Rocks, from the fact of a chain of rocks extending across the Missouri at its mouth. The sides of this cooley had on them banks of snow six and ten feet deep. In the morning we made an early start with a clear sky and bright sun; the wind did not seem to be unusually violent, but in less than an hour it became so.

About ten o'clock we reached La Chapelle creek, as tired a set of men as had been there for some time, I suspect. We all agreed that of all our bad days, this had been the worst. But we found good restoratives in plenty of hot coffee and meat, and a rest of a few hours made us all again in a condition for traveling. The afternoon proved pleasant and we soon reached Medicine creek which was fordable; we passed on and about seven o'clock found a good camping ground at the foot of an island some miles below the fort. We were off before sunrise in the morning, and at seven o'clock on the morning of Saturday, May 4, I had the pleasure of calling a halt opposite Fort Pierre.

The boat could not come for us at once, and so we had something to eat by way of variety, and waited, not very patiently, for it to come. About twelve o'clock it reached us, and as the wind was blowing, we were cordelled up about a mile, and then crossed and landed at the fort gate. The cannon and guns were fired in honor of the "boss," and we were received with great kindness. I was glad to stop; we had been forty-five days from St. Louis, and our trip had been a tedious one. A's. quarters are very comfortable and we were put in better condition here than we had been for some days. The Indians were soon inviting A. to a dog feast, but he was too tired to go; however, they made it, and at night brought over to him some of the meat and had a talk with him. I was too tired to attend, but some of the meat was given me, which I thought tasted strongly of dog. Yesterday was Sunday, and was truly a day of rest. This morning I feel very well, and am preparing for a start to-morrow for the Mauvaise Terre.

Tuesday, May 7.—This morning at seven o'clock I started from Fort Pierre, for the Mauvaise Terre or Bad Lands of White river. Our company consists of three—young M'Kenzie, myself and one of the men from the Fort. The whole equipment is at the cost of A. We are well furnished with provisions for about two weeks, and have three mules all of which are the worse for wear, but they are the best we could get, as the Indians have bought up all the best horses and mules and are clamorous for more. We had a pleasant morning for our start, although it was a little hazy. By ten o'clock we had reached Willow creek, eight miles from the Fort, and there we dined. After this we moved off, expecting to go thirteen miles further, but we found our mules scarcely strong enough for the trip, and have stopped after coming eight miles; I hope to reach Bear creek, our destination, on Saturday, but fear that we shall not be able;

however, I find that to take all things patiently is the best way to get along, and so I shall do so.

The face of the country along the route of to-day has been hilly; it is nearly all barren rolling prairie, scarce of water and timber, and having the soil strongly impregnated with saltpetre. I understand this to be the cause of the white appearance I here so often noticed; it looks like lime scattered over the ground, and has been very abundant to day. Not so much gravel, nor so many stones as on the other side of the Missouri. Mr. M'Kenzie has had great opportunity for learning the customs and habits of the Indians. He told me to-day, that while they have no priests nor regular religious system, they all worship something—they offer sacrifices of cloth and other articles to the Great Spirit, and this is done by simply casting them into the prairies with some form of prayer I suppose. Scarlet cloth is generally preferred for this, also calico with red in it, and sheet iron kettles that have not been used. The Gros Ventres and Assiniboires are more regular in this than the other tribes; they offer great sacrifices every spring, at the time of the first rain which is accompanied with thunder and lightning. Besides the worship of the Great Spirit, they all have something else to worship—a pipe stem, cap, feather or whatever suits their fancy.

The tribes along the Missouri have no chiefs; those who have authority amongst them gain it by their valor in war, their skill in stealing horses, and the number of their kindred. They have authority only because they are feared, and if accidents removes these props, they fall. This is often the case, as I have been told by several familiar with all the Missouri tribes. They make frequent war parties, but in my opinion their bravery is overrated; they do not fight openly and boldly as the whites, but their great object is to surprise. M'Kenzie told me of one party of Sioux, nine hundred strong, who went to war against the Gros Ventres and returned, having murdered only one little boy, whom they caught straying from the village. Another party had several taken prisoners and burnt before their eyes, and they, instead of revenging the death of their friend, returned crying, and were laughed at, when they got home. There are about six hundred lodges of the Yanktonians, and about four hundred of the Teton.

Wednesday, May 8.—We are encamped this evening on the Sheepoi river about forty-four miles from the Fort; our old mules have done better to-day than I expected, as they have brought us thus far, although they gave out again this afternoon. The road to-day has been very hilly and the land barren. Animals are scarce—we have not seen any but a single wolf since we left, and a few small birds; one of the latter is beautiful in shape and plumage. It is a small snow bird, white in winter, but now of a dove color with some white.

I picked up to-day quite a number of small pieces of petrified wood which were all lying in the road. The hills thus far have not been covered with stones and rocks as they were across the river; I passed but one hill to-day on which were stones scattered over the surface, and they seemed to have been made by the breaking of large rocks; the pieces were about the size of those for turnpike roads. The wood has been found more abundant than I expected from the accounts given me of its scarcity; it is scarce but still enough for a fire every ten miles, and water also abundant now, but I suppose not so in the summer. We dined to-day at Big Hole creek, now containing plenty of good running water, but in the summer only a large hole filled with water.

Last night we had a good deal of talk around our fire about the Black Hills. Joe, an experienced hunter tells me that they are covered with the finest pine timber, so thick that a person on horseback cannot pass through it in some places. There is an abundance of fine water but no fish; plenty of all other game. Grizzly bear are found there sometimes in bands, like buffalo; they live on fruit, flesh and ants; to get these they turn over the largest logs and eat them off the under side. He never knew a man to kill one with young, and less is known to the hunter about the time of their breeding, than about that of any other animal in this section. They are not found north of the Missouri.

[*Note*.—Grizzly bears are often found in the Bad Lands; we saw the fresh tracks of one at Sage creek, but saw nothing more of him.]

Thursday, May 9.—We are encamped this evening on Cotton Wood creek, and a pleasant evening it is; sitting by a fire with my ears delighted with the evening song of the birds, and my eyes gratified with the lovely shades of the sky as the evening draws on.

We have travelled about twenty-six miles to-day, which was doing wonders for our old mules; from the fine roads I should judge that with a good team and a light load, we could easily go from the Fort to the Mauvaises Terres in three days; it will take us however, five and a half. This morning we left the first fork of the Sheepoi creek, dined on the Ree creek, about fifteen miles from the former, and came on here for the night, eleven miles. These streams are all small; water and timber scarcer than heretofore; rolling prairie but more level land than yesterday. I have noticed that the streams along this road are different from those across the Missouri, in that their banks are neither so steep nor so soft. There are no stones scattered on the hills as there. Land apparently poor.

Friday, May 10.—Our camp this evening is at the head of the Little Missouri or Bad river. There is another river higher up call the Little Missouri, and how this one got the same name I cannot ascertain. We have come to-day about twenty-six miles; the route until noon was over a section of country very similar to what we passed before; the small streams had better timber on them than any we have seen since we left. About nine o'clock we came to what is called Grindstone hills; they are three elevations ranging north and south, covered with a sandstone; there are more stones on them than on any hill I have seen this side of the Missouri, and these evidently belong to strata beneath the surface; the soil on these little hills is different from what it is below and the eastern side is much steeper than the western; this is true of nearly all the large hills I passed this afternoon. I could not examine the top of the Grindstone hills, as I had no horse.

About four or six miles from them we reached a basin-shaped valley which at once suggested the idea of a lake with an outlet and an inlet; there is a ridge about the middle that divides it into two portions. The face of the country has been more varied than heretofore, and timber much more abundant; we crossed the beds of several streams which were dry; nearly all the streams within a few miles of this, go to form Bad river, and this point is called its head. To-morrow we mount a high bluff early in the morning, and have a prairie for a long way. Game as scarce as ever—Joe killed one prairie dog, one little grey wolf and missed two antelopes. M'Kenzie is cleaning the wolf's head. We were all very much amused at the old mules about four miles from here; we had just reached a good

camping ground and were passing on, when the mules thought it time to stop, and did so; we kicked and whipped, but the mules would only move in a circle or back; we all whipped and then laughed at the preposterous notion of encamping at four o'clock on a fine afternoon. Finally, after a while the whipping prevailed and on we went.

To-morrow we shall get a distant view of the Black hills. Got to-day, several specimens of insects; yesterday, one botanical specimen. A lovely evening, a pleasant camp, and a prospect of a good day to-morrow.

Saturday, May 11.—Our camp this evening is on Sage creek, a few miles in the Mauvaise Terre or Bad Lands of White river. We started this morning just as the sun was peeping over the hills; about two miles from camp we ascended a steep and high bluff, and entered on a wide prairie. This extended plain is unbroken by a hill until we reach a stream called Pinau's spring, about nine miles from Bad river. We passed down a few hills to reach this, and on the left of the road was an elevated piece of ground that appeared to me as though it might be a mound, but doubtless it was only a natural elevation. At this spring we found a hole containing good water, and had an excellent place for camp.

For breakfast we fared well, and among other things had prairie dog. I tasted the latter and found it pretty good, although it had somewhat of the dog taste. These little animals are very much like a grey squirrel and are much eaten by the hunters. Their bark is more like a chirp, and reminds me of a bird rather than of a dog. They lie at their holes and keep a constant barking, and their tails go as fast as their jaws, for every bark, a shake of the tail. We passed a large village of them covering several acres, just after we started, but I judge them to be lazy fellows, as but two appeared to be stirring, although the sun was then up. I found several good skulls of these animals, and a number of jaw bones which I preserved. Poor fellows! they had been shot and suffered to rot at their own doors. After breakfast I got several specimens of a plant growing abundantly on the green bank at the edge of the water. I also prepared some wood for the pins of my specimens of insects of which I have a few. We then started, and again arose to a level prairie which we had with only a few hills as far as Bull creek, about nine miles. Long before reaching this stream, I had my first view of the Bad Lands; a butte arose perpendicular out of the plain very irregular in its shape; I viewed it with a great deal of interest, as being the first of that remarkable ground which I had come so far to see.

We reached Bull creek about two o'clock, and there gave the mules some rest. Just before reaching it, Joe killed an antelope, of which we had seen several. We packed the hams and shoulders to camp. While there, M^r-Kenzie prepared the skull of a curlew, which Joe had killed in the morning; he also partially prepared the skull of the antelope. The stream was dry, having water only in a few holes; it was approached by a long descent, and the banks were very much washed. There was a sandy soil of about five feet, then strata of stones and gravel of about three feet, then another deposit of a light yellow clay. I took out a small piece of wood from a spot about five feet under the surface.

We left Bull creek about three o'clock, and moved along very slowly, as it was very warm and we all felt lazy. The road now lay over hills which became more steep and frequent as we approached the Bad Lands. These occasionally appeared in the distance, and never before did I see anything that so resembled a large city; so complete was this deception that I could

point out the public buildings; one appeared to have a large dome which might be the town hall; another, a large angular, cone-shape top, which I would suggest the court house or some magnificent building for public purposes; then would appear a row of palaces, great in number and superb in all their arrangements. Indeed the thought frequently occurred as we rode along, that at a distance, this portion of the ground looked like a city of palaces; every thing arranged upon the grandest scale and adapted for the habitation, not of pigmies, such as now inhabit the earth, but of giants, such as would be fit to rule over the ponderous animals whose remains are still found there. Again and again, as from different positions these hills came in sight, would such thoughts arise in my mind, and I could almost fancy, that upon the wind would occasionally be borne, the din and bustle of the immense city.

The hills could not remain with the present; it must range back to the earliest period, and ask whence were these things? but soon a nearer view would destroy all illusion and fancy would have to give place to fact, and allow these self-created cities to be mere sand hills. But sand hills as they are, they are wonderful and must excite the greatest interest in the scientific world. I wish that we had with us a company of men of this kind prepared for a thorough exploration, as my only hope is to be an humble pioneer, and to be the means of prompting others more able to engage in the work. Our route lay to the west of the Lands, and away in the distance, still further west, appeared a dim blue outline which marked the Black hills; these are distant about two days march.

The road from Fort Pierre is in a direction nearly due west, until about Pinot's spring, where it takes a general direction of south by west. As it approaches Sage creek, however, it becomes very serpentine, for so great is the descent from the plains to the water level here, that the road must follow all the windings of the ridge to get down to it.

The tops of the highest butes in the Bad Land appeared to be about on a level with the plain, but I took no exact observation. About five o'clock, we came near to Sage creek and entered on the Bad Lands; here it is merely a great number of small hills of all shapes thrown together in great confusion and very barren. In thinking of how these lands were formed, it occurred to me very forcibly, that it was by some convulsion of nature by which the ground sunk—the hills were not elevated, but were left so by the depression of the surrounding land. This opinion appears to be confirmed by the fact, that the highest butes have on their tops, prairie land covered with vegetation, such as the plain beyond the Bad Lands; then again, the formation of one of the first hills over which the road passes, confirms it; the hill is very steep on both sides and ranges nearly north and south, I think; it is just about long enough for a good road, and is covered as thick as the bottom of any stream with gravel and small stones, such as are found in the beds of streams here; at each end of this little hill stand two butes, one very slightly elevated, between which the road passes, and just opposite and east of the right hand one, is another like them, the tops of all of which are nearly level, and as well as I could observe, covered with the same kind of small stones as cover the road and just as thick; the sides of these small butes are perpendicular, and the strata of clay they exhibit are horizontal, showing that they have not been distributed by any up-heaving force.

This same thing is true of a great many of the hills; the strata are per-

fectly horizontal. I noticed one in which the hill appears to have sunk, leaving the middle of it rising up as a peak, twenty or thirty feet high, and in this peak the strata are horizontal. It is true, that there are a great many peaked hills with inclined sides, but throughout there are many with horizontal strata of clay ; giving evidence that they had been left there and not formed by upheaval. On Monday morning I hope to reach the petrifications.

Tuesday, May 14.—Yesterday I visited the Bad Lands, but did not get to camp until it was too late to record the events of the day. We had encamped during Sunday, on Sage creek, nine miles from Bear river ; in the morning we were off early, and took breakfast at Bear river. The road from Sage creek winds considerably at first, over some very steep hills. This creek is one of the most crooked streams I ever saw ; its banks are almost perpendicular, and from twenty to thirty feet high. I observed in several places in the bank, a thick stratum of slate about twenty feet below the surface of the ground ; the water is briny and leaves a deposit of salt on the stones ; it, as all the other streams along the route contains at present, no running water ; the clay in the bottom is nearly pure white, and so clear is the water, that at first it seemed muddy from the clay at the bottom ; when the water in these pools was moved by a gentle breeze, the shadows on the bottom were most beautiful.

A few miles from the creek we passed over some hills that gave evidence of having experienced the most violent convulsions ; these, unlike those seen on Saturday, appeared to have been upheaved and to have experienced the action of fire ; one place suggested the idea of a volcanic crater ; it was a slight hollow and contained a number of small rocks different from any around it ; a little above, the hills were of white sand, and one was covered with small rounded red stones.

From these hills we ascended to a prairie, the most level that I have seen ; for miles the eye could detect scarcely the least rise, and it gave not the smallest evidence of the convulsions that probably raged so near it. This level prairie continued with but a single interruption till we reached the hills of Bear creek. The descent to this is by a very steep hill and beyond it another level—a steep takes us to another level beyond. All along this route the Black hills are distinctly seen in the distance, and this side of them the woods of Shazer river. We encamped on Bear river near a spring, which is always anxiously looked for by travelers through this country. I shared in this anxiety and expected to see a fine flowing fountain. I was disappointed to find only three small holes in the side of the hill, but was again agreeably surprised to find cool, delightful sand water. It is the only water I have really relished for a long while, except perhaps that of the Missouri.

Immediately after breakfast, we left our baggage and started for the point which I had long hoped to reach ; my anxiety was great to see the wonders of which I had heard so much. A rapid ride over a good road, soon brought us to the edge of the descent ; this was steep but even, and in a few minutes we were on the level below ; nothing remarkable appeared here ; in about half an hour we reached the Bad Lands themselves and my interest was intense.

The road now was over the deposite of yellowish white clay, so hardened by the sun as scarcely to be impressed by the hoofs of the mules or by the wheel of the buggy—it was very smooth ; we now passed by a number

of small spots of ground from one to five feet above the level of this clay, having grass on their tops like those on the prairies above; their sides were perpendicular, and having fallen down by the action of the weather, the horizontal strata of sand and clay were exposed. We soon reached the place where petrifications most abound. I got out and looked around for them; I was shown a number of ugly dark red, unshapen masses—these, my guide told me were petrified turtles, their shells being destroyed by the action of the sun, and they are crumbling to pieces. The ground in many places is thickly covered with small lumps, the broken remains of turtles, which a few years ago were perfect. I felt disappointed, for I had expected to see many fine specimens of petrifications of different animals. I started however, on a voyage of discovery around this pond-shaped basin, and was shown a large turtle almost perfect, though broken in two pieces, its shell partly remained. This we secured as part of our treasure.

There were three of us and we took different directions. I found everywhere the remains of turtles in different stages of preservation, none perfect however. I picked up a number of pieces of bone, but found no teeth nor any heads. This was discouraging, but on my return to the buggy, I saw that one of the men had brought an excellently preserved head* of about the size of that of a large bear; he had found also several other good specimens. When I ascertained the locality of these petrifications to be so circumscribed, I hastened to finish collecting in one day, and although the sun was broiling hot, and we had no water except a very little brought with us to cook, we went, and by evening we had made quite a good examination of this immediate locality; we had about half a bushel of small articles, a number of excellent teeth and jaw bones, several good heads and a couple of pretty good small turtles, besides the large one before mentioned. These I thought as many as my means of transportation would allow. I have since found them to be more, for they are very heavy. I then filled a small bag with the clay, and the fragments of petrified turtle, and started with M^r Kenzie for the top of one of the highest hills. To gain this was no small matter, as the path was very steep and mostly very narrow; at length we reached it, and a most magnificent landscape rewarded our labor. The bute we ascended had on its top a level prairie of about twenty acres; it was covered with grass and as near as I could judge of the same level as those beyond the Lands.

These prairies on the butes, and they are on nearly every one, are the ranges of the Big Horn (*Ovis Americana*); they love to roam around the very brink and along the steep sides, and seem to think themselves secure in their heights. We judged this bute to be about two hundred feet high, and nearly all the others are the same. In every direction except towards the prairie we could see these great hills towering above the plain below, having their sides washed into picturesque shapes; the lower elevations looked beautiful with their carpet of grass and scattered about through the hard white clay surface, and this itself appeared almost like water at the height where we stood. Away to the south appeared the hill on which is the Ash spring, and near it several high hills which looked like the old towers that are perched on the hills of the Rhine; in every direction this same palace-like appearance was exhibited by the hills in the distance.

But how shall I convey a correct idea of these lands? this question has

* A new species of fossil *Rhinoceros*.—S. F. B.

occurred to me often to-day ; my own conception of them were very different from the general descriptions I had heard, and I fear that I must likewise fail in describing them to others. If you imagine an extensive tract of perfectly level land, and suppose that the whole sinks about two hundred feet except some large lots, every few hundred feet apart, you will have some idea of what was probably the original appearance of these lands ; you must suppose also a number, some very small and some very large, to sink not so much as two hundred feet, but near it : on all these the highest and the lowest, the level prairie soil remains, but below these lowest a few feet, a yellowish clay soil takes its place. In the course of time the rains wash the original perpendicular sides into various shapes still steep, and partaking of the spirit of the Gothic style of architecture. From some the original soil is washed entirely away, and they stand at intervals with whitened sides and rounding top amongst their higher and more fortunate neighbors. Fancy yourself on the hottest day in summer, in the hottest spot of such a place without water, without an animal, and scarcely an insect astir, without a single flower to speak pleasant things to the eye, and you will have some idea of the utter loneliness of the Bad Lands. It appears to me quite certain that slight excavations in some of these hills would develop many very perfect specimens ; many of those now discovered on and near the surface, most probably have been washed out by the rains and when exposed for some time they crumble to pieces, at least the petrified turtles do so.

I was much surprised to see, running through different parts of the clay surface, vertical strata of a singular looking substance, something like melted glass and almost transparent ; the strata is about one fourth of an inch in thickness and do not lie in a series of strata, but between each stratum there are several inches of the clay and they protrude several inches above the clay, while in many places the surface is covered with small pieces, as though injected strata had been broken up. Specimens of these strata were secured. [What is the substance ?]

Another singular fact is the *layers* of a peculiarly formed sand stone found in nearly every hill : they are generally of a rounded shape, weighing probably ten or fifteen pounds, and they are placed as stone in a wall around the whole hill, and between each layer there are from eight to ten feet of clay. They are not confined to this small size, but are also found very large and of the most singular shapes. At a hasty glance they seem as if put there by the hand of man ; in some places they appear as if they had run into these irregular shapes in a melted state.

There was no water to be found there, nor grass, except on the prairie spots ; the water when found is scarcely drinkable.

Wednesday, May 15.—Darkness interrupted my narrative last evening, and I resume it at our noon encampment at the head of the Little Missouri or Bad river.

On our return to camp on Monday evening, we found all the baggage safe. On thinking over the matter, I determined to start for home in the morning ; I had seen enough of the Lands to give a general description of that portion of them and had secured a few good specimens. To do more than this would have required good saddle horses, and I had only a pair of indifferent mules ; the weather was intensely hot, and no water to be had in the Lands, so that it would have been a great labor to have examined them more thoroughly, and besides this, I felt that a more general

examination such as my limited means and time would allow, would be of little service. I had already done enough to excite inquiry, and further exploration must be made by scientific men with a corps of assistants. One day more might have secured a Big Horn, but this would hardly justify my stay. Therefore, while I greatly feared that Professor Baird would be disappointed, I determined to start in the morning.

We arose early, but were detained by our mules having wandered off. About seven o'clock we started, very heavily loaded. I felt sure that we must walk the whole distance, and although such a prospect did not daunt me, yet a walk of one hundred and thirty miles in very hot weather, and after a three months trip, was no trifling matter; we started, but as we were ascending the hill of the opposite bank of the river, something about the tongue broke by which we were detained nearly an hour. Then one mule could scarcely pull the load up the hill, and the buggy was evidently on the point of breaking down. However, we got up the hill and on the level prairie—had a fine road. I got in to ride a short distance and rather sad thoughts occurred to me; there I was, laboring and fatiguing myself so much, in perfect contrast to my situation a year ago, or to my situation in Princeton, but I felt that I would prefer being there to lounging about the fort; the only thing that troubled me, was how to get the load home; we at last crossed Sage creek, and there stopped for dinner; the buggy looked still worse, and one of the springs showed evident signs of breaking.

After much uneasiness, I determined to leave there all we could, and hasten home and then send a cart for what we would leave. The principal reasons for doing so were, that the buggy could not carry the load, nor could I take any portion of my collection at all; for on the road out, so heavy was the load, and so weak the mules that we walked at least one half the distance. I felt sure also that I would give out; my limbs could not carry me much further. We therefore made what they call a baggage, that is a deposit of articles, and started for Bull creek; we had a very warm, fatiguing ride, and although we reached there early, we were so tired that all hands were willing to rest. We stopped for the night and had a fine encampment.

This morning we were up, had breakfast, and were on our way before sunrise, and about six o'clock we reached this place. A few miles from this we met a party with several carts going to trade with the Shagen Indians beyond the Bad Lands: they by promising to bring our baggage, lightened my heart very much. I find the few warm days since we passed here, have brought out the buds on the trees.

Thursday, May 16.—Last night we camped on Grindstone creek; the clouds were heavy and threatened rain, but happily it passed over without any. To-day at noon we camped on Bee creek, and this evening are at our old encampment on the Sheepoi river. To-day has been windy and rather cold: quite pleasant this evening. To-morrow we hope to reach the fort, and it is about time, as our provisions are nearly out.

Saturday, May 18.—Last evening about sunset, I reached the Fort very much fatigued, and very glad to get back again to comfortable quarters. We had traveled that day forty-three miles with our team nearly given out.

I had been absent about eleven days, one of which was a day of rest. I had traveled nearly three-hundred miles—had made considerable collections in the Mauvais Terre, and had seen a goodly portion of the country between the Missouri and the Platte. The journey was a fatiguing one to the

flesh but a profitable one to the spirit, and I do not in the least regret having made it; my only regret is that my limited means did not permit me to go prepared for a more thorough exploration.

Tuesday, May 21.—Fatigued as I was from my late trip, the rest at the fort has been very acceptable. Sunday was a quiet, pleasant day, but I did not do much reading as I did not feel very well, and in the evening had a severe attack of illness. On Monday morning I felt disinclined to move about; so I busied myself for a part of the morning in marking what specimens I have here. This so fatigued me, that I took a long sleep. In the evening the clouds threatened a storm, but although there was considerable thunder and lightning, there was, to our regret, scarcely any rain, which is very much needed for the farms which are beginning to be cultivated. But everything appears to indicate a very dry and hot season. The river has fallen about five feet while I have been away, and at the present stage of water the expected steamboat of the Fur Company could scarcely get up: however the June rise from the mountains will probably make it high enough.

The weather has been warm for some days, and should a rain come I shall be able to make a good botanical collection, but as it now is, all the flowers are very backward. I have found several different plants along the route and the same near the fort. One delicate purple flower reminded me of the beautiful Virginian cowslip which was plenty about Clifton; another I think, is a species of wild pea; another is a modest little yellow violet, and another appears to be a white variety of the purple one first mentioned; it resembles it in everything but the color of the petals, and these are pure white; the specimen I received is the only one I have seen.

Yesterday a party started out on a buffalo hunt across the Missouri, but I preferred staying in the fort. This morning A. and I took a ride on horseback four miles up the river, over a pleasant, level road, and passed through a prairie-dog village, but found the canine inhabitants very timid.

Thursday May 23.—This morning I arose about 5 o'clock and found the earth much refreshed by a slight rain of last night. The air was so sultry that we expected another shower but we have been disappointed. The river still continues very low and everything unfavorable for a very high stage of water. Felt better than for several days past; the fatigues of my long trip are passing away gradually, and some little energy is again creeping into my system. I spoke to M^r Kenzie about getting for me a bow with a quiver of arrows, which he promised to do, and also to start out some young Indians after the little rabbits peculiar to the prairie; he inquired about a young grey wolf which some Indians had in their possession a few days ago, but to my regret it had been killed; it would have made a good skeleton.

Having spent an hour in writing, I felt like taking a short botanical excursion and spent about two hours up the river gathering several good specimens of a number of different plants, and also collecting some insects.—Flowers are still rare. On my return I saw a number of beautiful birds which were singing cheerfully; one of these was a little mocking bird such as we had first heard on Sage Creek; he perches himself on the topmost twig of a tree and sings away his varied song with great glee. I saw also a large and very beautiful species of the thrush. After dinner I rode with my brother to the Little Missouri; the hills in that direction are covered with gravel as across the Missouri. Brought in two botanical specimens. Afterwards went out to the lodges with Gilpin to witness a great game at

bandy (ball) by the Indians ; about sixty were engaged in it, old and young, men and boys, and they had a number of bets staked on the result. The whole company appeared to be greatly interested, as the women stood at the lodge doors occasionally cheering on the game with songs and shouts. — The players, had laid aside all their garments except their clouts, and played with as much zest as a set of school boys, but not with equal fairness ; for some of them carried blankets or robes with which to stop the ball. This, I am told, is a favorite game with the Indians, and sometimes hundreds are engaged in it.

They have another popular game called billiards on which they bet a great deal ; it is entirely different from our game of that name. In the evening walked up to the prairie village with A. to kill a prairie dog, but did not succeed,

Friday, May 24.—Last night I was aroused by the roaring of the wind, blowing violently through my open window, which I immediately closed ; soon after my ears were delighted to hear the rain beating heavily on the roof, and I was prepared for the evidence shown this morning of a heavy fall of water.

In the afternoon I took a walk up the river for exercise and to gather flowers ; saw very few, as the day had been cold and cloudy. I found, however, two new specimens and several of the old ones were quite numerous, especially the delicate purple violet. I paid a hasty visit to the prairie-dog village and got three skulls, and then hastened home refreshed by the invigorating breeze, and prepared to relish my supper. M'Kenzie was out at the same time and secured three birds for stuffing—one of them a thrush and two others quite small specimens.

I noticed on my way home a black bird with his wings marked with white where one species has the beautiful, brilliant red ; also noticed a little bird with its breast of the singular color of a pale pea-green.

After tea walked out to see another game of *bandy* ; all were again at it with hearty good will—it appeared strange to see the old chief, Little Bear, with nothing but his breech cloth on, and his *bandy* in hand as hard at play as the youngest child in the party, and there were some quite young among them. They afforded a pretty sight as they hurried in different directions after the ball in their *flesh colored uniform, their scarlet cloth streaming out behind, with an occasional head highly ornamented*

One squaw only joined in the play and as she had on an English dress she appeared somewhat out of place. The whole encampment however took great interest in the scene, and every lodge had its collection of squaws and babies looking on with varied interest. It was altogether a wild and cheerful scene, and a good illustration of one of the national amusements of the Indians. I would suggest it as a grave question for those who can see farther than their neighbors into a mill stone—whether our school-boys derived this game from the savage, or handed it over to them, or whether both being ranked under the head of savages may be regarded as having inherited it from the same original source ?

Two of the voyageurs were engaged in the game, and at the end of the sport an Indian gave one of them a horse, worth probably twenty robes ; the same person a few days ago received a present of forty robes ; “fortunate fellow” would the uninitiated exclaim ; but an Indian present is like an eastern gift, which is to be returned with compound interest ; in this country one finds it more to his advantage to buy anything he may want

from an Indian. A trader just pointed out to me an Indian who had given him a porcupine skin in the winter, and said he, "I have not done paying for it yet though I have given him the value of seventeen-hundred dollars already." This system of presents prevails to a great extent here; you would think them the most generous people in the world, and they are really so, but they get paid a great deal in the same way. This refers to the whites as well as to the Indians. Obtained from Mr. Gilpin some valuable statistics about the Sioux nation.

Read Lynch's work, and was exceedingly struck with the similarity that must exist between the conformation of some parts of that country around the Dead Sea and this; so striking is the resemblance that a paragraph descriptive of it is almost the same as my language in describing the distant view of the Mauvaise Terre; it is found at page 330 chapter 15, in the account of an excursion to Masada, where "they beheld in the distance most singular formations resembling a plain covered with towns and villages, marble cities with columns, temples, domes and palaces, which as they (the beholders) advanced faded away and finally resolved themselves into curiously configured hills, so marked and channelled by the weather, that although aware of the formation, it was difficult to destroy the first illusion." See pages 91 and 92 of this journal.

I think the picture of Masada, facing page 332 might easily pass for a view of one of the sand butes of the Bad Lands. It will certainly be an interesting question for my more learned followers to investigate, and I hope it may serve to throw some light on the formations in both districts.

A. mentioned to-day some Mauvaise Terre high up on the Missouri more wonderful than those on White River—he did not know whether petrifications were found there or not.

Saturday, May 25.—This morning early the clouds were very heavy and indicated a heavy rain but it did not come, although it has been cloudy throughout the day; just now, however, it appears as if about to begin, and it probably will be a long one. Fire has been very pleasant all day. Before coming here I had been led to suppose that changes in temperature were not sudden: my experience however has been very different. But my constitution does not suffer from them as it did in the East, either because of my more vigorous health or of the great purity of the air, and perhaps it may be from a combination of both.

During the forenoon I took a long walk down the river on the look-out for plants, but found very few; however got three new specimens for the herbarium, and several fine yellow violets, which I hope will press better than those heretofore tried. I walked for nearly a mile on a sand bar, and found imbedded in the sand a well preserved buffalo skull, wanting only the lower jaw. I sent Jim for it and shall give it the privilege of a visit to the East. M'Kenzie did not succeed in skinning the small birds shot this morning, on account of such large holes in them. In the afternoon one of the men brought me a small owl which lives with the prairie-dog. I killed it, and with M'K's assistance took off its skin; but as we have no arsenic, I fear it will not keep; I have, therefore, made a skeleton of it and if the skin decays will have at least its bones.

While engaged in this operation, a band of Indians entered the yard for a dance; they were about twenty in number and had two leaders, one on horse back. All were dressed in war costume and had their bodies painted with vermilion, or with yellow ochre; they exhibit the same taste for dis-

play that the whites do in their military costume ; the buckskin leggins of those who had them, were ornamented with very long fringes of different colors, and so also were the coats of several ; some had long tails ornamented with metallic plates about as large as a dollar, reaching to the ground ; their lances, which were about ten feet long, had a long fringe of brilliantly colored feathers reaching almost the whole length ; some had handsome bows and quivers, and indeed time would fail me in describing all their ornaments and implements. Having formed themselves into a circle the musicians began to beat their tambourinö like drums, and to howl most melodiously according to their taste. All joined in the song, which sounded very much like the negro melodies, all notes and no words ; this I was told was the case, but the negro is far more musical. While singing they also danced, that is, jumped up and down in the same place ; after having thus danced and sung and drummed and beaten on an instrument of two sticks, they all gave a great flourish of instruments and loud halloos as a grand finale. These shouts reminded me very much of the screech and shudder usually evolved on jumping into an ice cold bath.

The first performance was followed by several others of the like character intermingled with occasional speeches — declarations of what wonders the orator had done in war, or perhaps intended doing. These were received with a true military salute by the beating of drums and loud hallooing. Another ceremony was the presentation of a *calico shirt* to one of the leaders, and of a little tobacco and vermilion to the party ; something of this kind is always expected. Why is it that all uncivilized nations are so fond of the cry “give — give.” This was the first Indian dance I had seen and I confess I looked upon it as on some of those horrible rites of heathen lands, merely as a curiosity, not with delight. But all these customs are calculated to suggest many philosophical reflections as they indicate more than appear at first sight. The philosophy of costume is well worthy of study. The river is rising rapidly this evening and a fine rain falling.

Sunday, May 26.—After tea I took a short walk with Mr. Hodgekiss, and as we passed through the lodge I remarked to him that we ought to go armed with clubs to keep off the dogs which were then exhibiting a threatening attitude. He replied that in a Crow village it would be impossible for us to pass with safety as we were then doing, but would have to go wrapped in a robe as an Indian, and under the guidance of one, and even then, clubs would hardly protect us from the hordes of savage dogs that would assail us. The river still continues to rise, and is already in good navigable order, so that we look for the boat in about two weeks. It cleared off last night and we have had a bright sun for the most of the day ; but about sunset dark clouds overspread the sky and there was every appearance of a rainy night.

Monday, May 27.—This has been a day of rain and mud, but in the evening it has cleared off beautifully. Spent the day in reading and writing. Made out this afternoon a tabular view of the Sioux nation on the Missouri, so as to exhibit their numbers, divisions and localities. This has been executed under the inspection of Mr. Gilpin, who has been in this country for ten years, and is good authority on this subject ; his account of the numbers of the different tribes was confirmed by six or eight Indians of authority who were in his room at the time.

Hodgekiss mentioned a singular fact this evening, namely, that the spring which is the head of the Yellowstone, gushes out in a strong stream of excellent and very cold water, and that about thirty yards from the source it

is divided by a large rock into two parts, one of which forms the Yellowstone River, and the other the Lewis Fork of the Columbia. He says the elk are far more numerous on the Yellowstone than we suppose—that in one place the Indians have made quite a substantial fort from their horns piled together, and that in another place quite a large hill has been formed by the number of these horns collected together.

I have for some time intended giving a description of Fort Pierre Chouteau and its environs, but have postponed it from day to day for no good reason. A person coming up the country on the other side of the river has his first view of it about half a mile below, and it then presents a most beautiful sight.

The main object in the picture is the fort itself, having a white appearance, lying four-square, surrounded by a square palisade wall fifteen feet high and three-hundred feet on each side, with bastions at the North, West and South East corners; then the Indian lodges are seen around the fort; by their irregularity of position, their conical shape and varied colors, giving life and a picturesque air to the scene; and for a couple of miles below the fort and between it and the bluffs, the whole plain is dotted with horses grazing and moving leisurely about, while the bold bluffs a mile west of the fort affords a fine back-ground for the picture. The shores immediately opposite the fort are high bluffs almost from the water's edge, and with their steep barren sandy sides, look as if determined to wrap themselves up forever in the dignity of their own sterility. The main channel runs along this shore, althought at present there is a probability that the boat will be able to land at the fort.

The fort is situated on a beautiful piece of bottom land which extends for some miles along the bank of the river, and is skirted by a range of bluff hills on the West, by which you rise to the rolling prairie beyond. The bottom land affords fine pasture and has a beautiful appearance when the grass and flowers are out on it; but the company pasture their horses on the Bad River about eight miles from the fort, as the Indians always have so many horses here.

On entering the fort two large gates are seen, over each of which there is a large picture intending to represent scenes of interest to the Indian; we shall enter by the one to the left, as the other leads to the stable-yard, and we shall choose a dry day for our visit, as on any other our shoes will suffer very much from the mud. A number of Indians, men and women, with their blankets wrapped around them, with their bare legs, painted faces and curiously ornamented heads, will probably be lounging in perfect listlessness about the gate. The main building stands opposite the gate and occupying nearly the whole length of that side, with a porch along its entire front, windows in the roof and a bell on the top, and above it the old weather cock, looking for all the world, like a Dutch tavern. The main building contains the mess hall, kitchen and rooms for the traders; to the right of it you see a neat log house with a pleasant little portico in front, and oil painted window blinds—that is the boujier or boss' house, and the long one storied building painted red, and occupying almost the whole of the North side of the fort, is the store and warehouse where the goods and robes are kept. To your immediate right as you enter the gate are the blacksmith's shop and several rooms for the men, and to your left is a small building containing the carpenter shop and further accommodations for the men; nearly the whole south side is occupied by a low building divided into seven rooms,

occupied by the laborers and traders. These low houses are covered with dirt roofs ; none of the houses are built against the fort walls, but behind them is a space of about twenty-five feet, and this is occupied in various ways. The north side has a house for the deposit of harness and implements of labor — the powder-house, milk-house for quite a good dairy — the stable and stable-yard ; the south side has two large buildings for corn, meat, skins, &c., while the south west corner is occupied by the office, a one-story building ranging with the main building, and having behind it a house occupied by one of the clerks, and a yard in which the feathered tribe live and lay eggs. This arrangement of the buildings leaves quite a large square in the centre, from the middle of which generally rises a tall flag staff, but at present there is none — the last was blown down by the wind.

The Fort Pierre grave yard lies about a quarter of a mile south of the fort ; it is a square piece of ground which has been well fenced in but not ornamented in any way ; it contains the bodies of a number of dead, both Indians and Whites : the latter are in the ground and their graves are marked with wooden crosses, or with tombstones recording their names and dates of their death. The Indians however have followed their own customs in disposing of their dead, which is to place them on a scaffold about eight or ten feet from the ground. As you approach the yard coming from the fort, you see elevated on a scaffold supported by rough willow poles and now half broken down, a confused pile of old boxes of various lengths — old trunks and pieces of blankets hanging out. These may seem strange things for a grave yard, but these old boxes contain the bodies of dead Indians : they were originally placed on a good scaffold and had piles of blankets wrapped around them, but the scaffold has broken down from exposure to weather and weight of the bodies, which appear to have been heaped on without order of any kind. If you look over the fence to the left of this scaffold, you will see on the ground one of these boxes which has probably fallen down and broken open : and there the bones lay exposed, except the skull which perhaps has been buried by some friend of the deceased ; if you look a little more closely you will see lying with the bones, a dark looking object about three inches broad and perhaps fifteen long, tied around with a string : this is some tobacco given to the dead to smoke in the other world ; they always place with their dead almost every article of common use, for their benefit in the other world : blankets, sometimes as many as twenty, the best the parties can afford — tobacco, sugar, coffee, molasses, kettles of mush and other things of use. These remain undisturbed until they decay, or are destroyed by the weather or wolves. On the east side is a scaffold put up a few months since ; the box is a rough one, daubed with black paint, and is surrounded by several old trunks, that were the property of the old squaw who rests within. On the opposite side is another scaffold, on which is placed the body of a man who died not many months since ; you can see the scarlet blanket through the large cracks in this rude coffin. It appears to me, that this method of burial originated in a desire to protect the bodies from the wolves, more than in any of their religious opinions : they frequently bury the bones, after the flesh has decayed entirely. On a large tree, a little above the fort, is a body which must have a great pile of blankets on it, from the size.

Tuesday, May 28. — This morning arose early and found the day to be clear, with a delightful, bracing air : after breakfast went up the river about a mile, intending to cross in the flat, with some Indians going after buffalo,

but they went in such numbers, and with so many horses, that I declined, and came back. Spent an hour in writing, and then partook of some real Baltimore oysters; they were a year old, however, but tasted better than I expected.

After dinner started with M'Kenzie up the river; he shot at a prairie squirrel and missed; we then went on to a cooley, in which there was a large rock of red sand stone, seen frequently in the prairies below this, about five feet each way, and appears to be on the surface only. I had no hammer and could not bring away a specimen; the side of the hill had many stones in it as large as a half bushel measure, but they were nearer a limestone in appearance. I got in this little valley, specimens of five or six plants seen for the first time. After returning, I spent an hour in putting dried specimens in the herbarium.

I received some information about the Indians, of which the following is the substance. The Sioux nation has no general council, but each tribe and band determines its own affairs. These bands have some bond of common interest analogous to the ties of our secret societies; the Crow-Feather-in-Cap band are pledged to protect each others wives — to refrain from violating them, and if the wife of one of their number is stolen by another of their number, she is returned, the band either paying the thief for returning the stolen property, or forcing him to do it whether he will or not. Should a wife be violated, they are bound to aid the injured brother, in revenging his wrong. These bands have societies analogous to the Orders, Divisions, &c., of our secret societies, in all parts of the Sioux nation, and a stranger always finds friends amongst those of his own band. One reason why this band are thus pledged, is that so many quarrels arise because of the women; that say that in any camp, if a difficulty occurs, in almost every case a woman is the cause.

The Strong Heart band is pledged to protect each other in their horses; should a Strong Heart from a distance, steal some horses, and they be claimed by a brother Strong Heart, his fellows would tell him that he must give them up, or they would give the robbed man some of their own horses, regarding it as the greatest disgrace to themselves, to allow him to go away on foot. And thus, I suppose, that all these bands have some common object that unites them together; and here we have the origin of this system of banding; in the absence of law it takes the place of our system of justice. The only law among the savage tribes is that of force; if a man is injured, he must himself punish the offender, but in most cases, to do this, he must be supported by others, and who so proper for this as his brother or brother-in-law? And thus, for mutual protection, kindred are forced to unite in bands.

To give me some idea of their religion, I may state that they pray to the Great Spirit on any occasion when they feel the need of his aid, and then promise a sacrifice of cloth, or a feast of dogs to him. Thus, a man is struck by a ball that only sticks in his flesh, producing a slight wound; from this circumstance he fancies that he is not to be killed by a ball; he holds it up and offers a prayer to the Great Spirit, thus: "Oh, thou Great Spirit, I believe that I am not to be killed by a ball, and, as a proof of that belief, I will wear this ball constantly, and will give to you, exposed to the sun and air till they rot, some blankets and tobacco; should I lose this ball from around my neck, then I believe that the next one will kill me." This ball is thenceforth worn as his "medicine," and it is prayed

to and guarded with the most scrupulous care ; it is therefore more than a charm, having the addition of the element of reverence and worship. The sacrifices of blankets, &c., are exposed on a tree or in the prairie, till destroyed. In battle, when they feel themselves in great danger, like the warriors of old, they stop, and with outstretched arm, they pray to the Great Spirit, and promise a sacrifice if they have success, and are careful to fulfil their promise. But they have no idea of future reward and punishment ; all are to be happy in the other world. They know of no moral relation to God ; his will, as a standard of right and wrong, is never heeded, but like the Greeks and Romans, they pray for his favor in their worst deeds.

One of the most singular things amongst their customs is the relation held by a man to the parents of his wife ; he never names them, speaks to them, nor looks his mother-in-law in the face, no matter how long they may live together ; he is "ashamed" and thinks he shows them the highest respect by acting so ; he gets the best lodge, and is bound to supply the old people with meat until he has a family. The young couple occupy the large lodge, while the old folks live in the small one behind them, and should they accidentally meet, they hide their faces in some way. All his dealings with the old people are through his wife. This treatment of his new parents is the highest test of good breeding among them, and the man is exceedingly ill-bred who violates this custom. The husband never mentions his wife's name, but in speaking to her uses the word "*tche*," which good interpreters say they cannot translate ; it is not confined to this use, but is addressed also to a man when speaking to him, in speaking of his wife. If she have children, he speaks of her as this boy's, or this girl's mother, naming the child. The philosophy of this custom does not occur to me, but it is a very important fact, in the attempt to ascertain the ruling principles that make the savage to differ from the white man. What a contrast to the happy circle of friends to which a marriage often introduces a man amongst us. Indians despise the female sex ; say that woman was made only for doing man's drudgery, and for the gratification of his grossest passion ; they say that whites ought not to have women, because they don't know how to use them — thank God we do not, in their sense. How grateful we should feel to the Bible for the great social happiness it has diffused over the world. I think that Bancroft says the Indian language contains no word for the abstract father — that he always says my father or your father, &c. My brother says that it is not so in any Indian language that he is acquainted with.

Wednesday, May 29. — I forgot to mention yesterday, how the ceremony of sending and smoking the pipe was conducted. The different bands of Sioux are not bound to take up arms in defence of one another ; when therefore, any band finds itself under the necessity of calling in the aid of others, *it pays them*, and the negotiation is carried on somewhat in this way : The band wishing aid, collects in solemn council, and the pipe and tobacco are placed in the centre ; having no written language, of course the message must be conveyed verbally, and the messenger who has been chosen is in the council. They all make their speeches in his presence, so that he may know what to repeat ; they then, with solemn ceremony, bind up the tobacco in a piece of skin, tie it in a particular manner, and paint it with blue earth and vermilion. The pipe and tobacco are then put into the hands of the messenger to be borne to the tribe to which he is sent. Having

arrived at their village, a council of the braves is held to hear his message, and to determine whether they will open and smoke his tobacco. He makes his speech, states the wrongs suffered by his tribe, tells the number of blankets, horses, and robes that will be paid them for their services, and awaits their answer. If they determine to accept his offer, the tobacco is opened and smoked; they are then bound by the strongest ties to meet at the rendezvous, and to fulfil their engagements; if they fail so to do, they are scorned and derided by the other tribes. On their arrival at the appointed place, the articles promised, are handed over to the partisans or leaders of the different bands in solemn council, and as there will not be enough for every one, the leader, if he is generous, will give these things to those of his band who are poor and have none. On the contrary, should they decline the offer of this ambassador, his tobacco and pipe are returned to him unopened, and he is dismissed with some present.

The Sioux language is said to be as flexible as our own, having many different forms for expressing the same idea. They have inflexions of nouns and verbs, but no genders; it is said to be a more difficult language to acquire, than either the Blackfoot or Crow tongue. Every day seems to develop something interesting relative to the Indians, and a careful observer could, in a year or two, collect a volume of valuable facts relative to their habits and languages.

Thursday, May 30. — This morning at breakfast, I was glad to learn that the carts from the Cheyenne Indians were in sight, and soon afterward was relieved of a good deal of anxiety by seeing them unload my specimens from the Bad Lands. They all came safely, except some of the bags, which had been torn by wolves which had opened the cache, eaten up all the parfleche, and opened the bags in search of something more palatable, but the unkind bags gave them stones when they asked for meat. I think a number of the small pieces of petrified wood were lost. A part of the morning was passed in packing the specimens in boxes, and soon I had the pleasure of seeing one large box well filled, marked T. A. Culbertson; another box is also nearly full. Afterwards I prepared a long report to Professor Baird. While engaged in writing it, I heard a gun fired in the yard, and a noise as if a large number of persons had arrived.

On going to the window, I saw a large band of Indians on horseback, preceded by several on foot, bearing two flags — the stars and stripes; it was a band of the Blackfeet tribe of Sioux. They had just arrived with about fifty lodges, and, while squaws were putting up these, the "Braves" come to announce themselves. They dismounted and entered the reception room with a friendly shake of the hand to most of the whites present. A feast was ordered for them. In the middle of the room were placed four (five gallon) kettles, filled with most tempting mush, and beside these, to keep them in countenance, were two others, equally large, filled with equally tempting coffee, already sweetened, while on the floor were fifty large hard crackers, (pilot bread) and about one-hundred plugs of very common tobacco. The Indians were all around the room on chairs, if they could get them, while those in the middle sat on the floor, enjoying the most happy anticipations. They had no meat in their camps and had been almost starving for some time. I entered and placed myself full length on a bed beside Gilpin, who was master of the feast. While the company were detained, waiting for the arrival of one of the young men, I took observations; and first, I noticed that they had all the gravity of countenance usually exhibited by hungry men of

all countries, while waiting for their dinners; there was no laughing or jesting unbecoming the serious business before them, but the various pipes were passed round in profound silence. They were all in full dress, presenting an amusing mixture of savage and civilized costumes; many of them had fur caps, decorated with handsome plumes of the ostrich feathers, dyed red; others had on the much coveted soldier coat, and all wore highly ornamented Indian dress. There was a most agreeable variety of faces, exhibiting all degrees, from that of the stern old brave to the light-hearted daring young scalp taker. There were several who had an amiable and intellectual expression of countenance; they were tall, lightly framed, and with the features of the face delicate and long. Among these were four brothers, noble-hearted fellows, the sons of an old man, whose bones I hope to carry away with me.

These were the Indians that Gilpin traded with, and he said they were all strongly attached to him — that they are most excellent men, although they certainly bear a bad name with the other traders. He said that the young braves of noble families despise a mean action, such as not paying for anything a trader might advance them on credit — that they would cast it up as a reproach to any one who should fail in so doing. One of them who sat near recognized me as a brother of Alexander; he asked Gilpin if I was not, and then gave me a friendly shake of the hand. After all were in, and each had his pan, (they provide their own utensils for eating here,) this one arose, shook hands with Gilpin, myself and the Little Bear, a chief of another tribe, and made a short speech, returning thanks for the feast, &c. When he closed, an old pale-faced warrior came forward, shook hands with us, and remaining on his feet began a speech. "Ah," said Gilpin, "that old fellow can speak, he is a second John Q. Adams." I regarded him attentively; he was of the common height, broad shouldered, with an expansive forehead, and that style of prominent and large features which indicates intellect and sternness. He stood erect, with his left hand holding his blanket, and with his right making gestures continually. Never did I listen to a more ready flow of language, or to a more self composed, dignified speaker, whether he addressed us or turned to the Indians on either side of him. His speech was also a complimentary one, and was short, as the dinner was getting cold. He concluded, and two young men took the office of waiters; they had no light task, and before they got through had burnt their fingers, and made the sweat roll from their faces. It was pleasing to observe the quiet and decorum throughout the whole scene; each one waited patiently until his turn came, and then modestly received his cracker, meat or coffee. The Little Bear, the old man and an invited guest, had no dish, and when the coffee was being served out, a large tin mug was got for him; the young man who was serving, instead of passing on, waited until the mug was brought, and then gave the old man a treble portion, being a very pleasing instance of politeness and respect. As they drank their coffee nearly every one, especially the old man, made their compliments to us, as we do in drinking wine. The feast went on cheerfully, and towards the conclusion, our old man started a song, or rather a howl of thanks, which was caught up and echoed by several. Gilpin tells me that these songs have only an occasional word and that it is the same with nearly all their songs. The tobacco was then distributed, two plugs being given to each; but the young men, being able to kill buffalo and buy tobacco, gave their portion to some of their friends too old for the hunt. I

noticed quite a number passing their pans, well filled with mush, to their squaws who were standing about the door, which indicated generous and kind feeling. This was not an act of impoliteness, but just the reverse according to Indian etiquette, for with them it is very impolite not to eat all that is given at a feast — you must eat or *carry away*. Soon after, the parties dispersed and went to their lodges, to feast again most probably.

On asking at what age young men were allowed to attend these feasts, I was told that they went to those given by whites at all ages, but that they must gain admittance to the feasts among themselves in one of three ways — by stealing a great many horses, by giving a great deal to the poor, or by bringing in the scalps of a great many warriors. The men who appeared so peaceable this afternoon were all ready to kill their fellows, on any provocation, and, doubtless, every man of them had killed more than one. They are regarded at the fort as the worst of all the tribes, and are blamed for killing cattle every time they come. They have traded a large number of robes this afternoon, and nearly all for eatables, as they were starving; they want to trade for meat, but Alexander will not do this, on any consideration, for fear of starving himself.

Oh! for the jaw bone of an ass to murder these miserable Indian dogs; just now, as at every few minutes during the day and night they are howling like a set of fiends; they have not a decent bark like our well-bred American dogs, but it is howl! howl!! howl!!! everlastingly — but after all it is their nature, for they are more wolf than dog.

Recipe for making dried Plums. — It is late, but I must note a new way, or rather the Indian way of drying plums, for the benefit of our economical housewives. When a lady wishes to preserve her plums, which grow here abundantly, she gathers them, invites her neighbors, and they spend the afternoon sociably in *sucking* out the plum stones, saving the skins, which are carefully put away and dried, and when cooked with the scrapings of a buffalo skin, are esteemed a most rare dish. This is worthy a place amongst “Miss Leslie’s Thousand and one Receipts.”

Friday, May 31. — This morning was spent in hunting antelope with M’Kenzie; we rode about ten miles over the hills bordering the Missouri, but did not get any game. The few antelopes that we saw were very wild, and although M’Kenzie shot twice, the animals were too far off. A wolf was seen scampering along, but at such a distance that we could get no chance for a shot. It appears as if I were to get no game at all here; the best marksmen about the fort have tried to get wolves, antelope and prairie dogs, but thus far without success. I have tried to get rabbits, and have engaged several young Indians to bring me some, but none have yet come. About two o’clock this afternoon, Gilpin, Alexander and myself went to a feast in the village, given by one of the tribe which arrived yesterday. On entering the lodge, we found but few assembled. Opposite the door or place of entrance, through which we passed by stooping and dragging ourselves in, was placed a good robe for our seat, and in honor of the occasion, a small square box containing a flag. In a short time the whole company had assembled, consisting of perhaps twenty persons. An old man, who came in last, returned thanks to the host for his hospitality, and then each of the company followed in turn, all using the same form except the title by which they addressed him: thus — “brother-in-law, I thank you for the feast,” — “cousin, I thank you, &c.” — “uncle, I thank you, &c.” Then

the host gave the hand of friendship to the whites present, and made a short speech, thanking us for our company, and making some inquiries concerning them ; to these M'Kenzie replied, and then the master of ceremonies began to help the food, each one having provided his own dish. The mess, consisting of two dogs, of reverend age and valuable services, judging from appearances, had been boiled in a large copper kettle and was served out in very generous shares, beginning with us, and going around to complete the circle. I noticed that the man who sat at Gilpin's right was not served, nor had he a pan — this seemed very strange, as he was the one who had made the speech to us, and appeared to be a prominent personage. On inquiring the reason, I was told that he was the host. "The host," said I, "and don't he eat?" "No, etiquette requires that he shall not partake at all of the feast." Nor did he serve it out, but simply sat as a mere looker on. A rib was given each of us, and having tasted it, the custom of carrying away what we could not eat, was a relief to us, and we left, carrying with us our ribs. There was a good deal of conversation, during which one of the old men spoke of their custom of eating dogs, and said that they regarded dogs as we do cattle. And it is partly true ; they are of great service to them, being much used as pack animals, so that a dog feast is really an expensive one and a great compliment. But I was surprised to learn that this custom does not extend to the mountain Indians, who eat them only when starving. Hodgekiss tells me that a fat pup, well boiled, and the water changed several times, and then allowed to cool, is a delicious dish, and has no dog taste about it.

Before one of the lodges near where the feast was held, was the body of a little girl who had died yesterday ; it was wrapped in a blue blanket, and was to be placed on the scaffold as soon as the coffin should be finished. I did not see the ceremony of conveying it to the tomb, or rather, to its resting place, but it was probaaly done in a very simple manner, as I was told that the burying of the dead, except braves, is left principally to the squaws. Blankets and food are placed on the scaffold for their use in the other world ; the family of the deceased mourn very much, and if others aid them in this sad work, they expect pay and are sure to get it.

Wednesday, June 5. — This afternoon I am on the Missouri, above Fort Pierre, and again at leisure to write as usual. On Monday evening it rained very heavily, and in the midst of this pouring down, an Indian arrived and stated that the steamboat was but a few miles down the river ; this announcement electrified the whole establishment, and there were various opinions as to the hour she might be expected. At length we all settled down in the belief that she certainly could not come that night, but that morning would bring her. About this time Gilpin brought me a prairie dog an Indian had killed with a stick ; the skin was not injured in the least, and the hair was in excellent order, the old coat having been shed so recently. I determined to take both skeleton and skin, as the specimens are so rare. An Indian who happened to be in the room soon took off the skin, and I began to cut the meat from the bones, but it turned out to be a long job. At length the bones were cleaned in tolerably good order, and after various efforts the skin has at length been stuffed so as to make a fine specimen. I may think myself fortunate in having thus secured a prairie dog ; I am told that Audubon failed in getting one, and Dr. Evans told me that he had not secured a specimen last summer, as the skins of three he had taken spoiled.

Tuesday morning opened rather gloomy, but in spite of mud on the earth and clouds in the sky, all preparation was made for the arrival of the boat, and every one was on the look-out to get the first peep. At length, about half-past one o'clock, the smoke was discovered as the boat began to round the point below the fort; in about half an hour after, she hove in sight, and before very long, we had the pleasure of boarding the *El Passo*, as she lay just below the fort. Salutes were fired on the boat and at the fort alternately, from the time she appeared in sight until her landing, and there was a great gathering of Indians and Whites to welcome her. A. recognized on the hurricane deck, his friend Dr. Evans, of last summer, and soon I had the pleasure of making his acquaintance. He had visited the Mauvaise Terre last summer, and had made quite a collection there; this, of course, was a bond of sympathy between us; it was a real gratification for me to converse with an intelligent man on the subject of the Bad Lands. He was very free, and we soon understood each other.

The substance of our several conversations was that we were both disappointed in the appearance of the Bad Lands, in the number of petrifications found, and in the number of localities when found. He says he believes they are scarcely to be obtained in any other place than the locality of the turtles near Bear river, visited by me. Our estimate of their extent was the same, namely — thirty by sixty miles; he says that white earth now runs through the whole length of them. Before seeing him I had felt very much disappointed about my collection, fearing that it would be of little value; but was greatly relieved to hear him say that such had been his feelings before reaching the States, but that he was agreeably disappointed to find that his small collections had excited a great deal of interest in all who saw them, and he predicted a like favorable reception for mine. The letter I had written to Professor Baird was submitted to his inspection, as I wished to have his opinion of what I said; he had attentively read through the six pages, and complimented me on the accuracy of what I had there stated.

"There was no alteration that he would suggest," though he gave me a caution I readily acted on, which was not to state any thing except on my own personal observation, not depending even on the best authority, "for," said he "this may appear under the sanction of a well known name, and may afterwards be discovered to be a most ridiculous error. I mentioned to him that I thought, from Lieutenant Lynch's description, that similar formations abounded along the Jordan; he examined the account in his book, to which I have before particularly referred, and coincided in my opinion; stating that he supposed that such was probably the case. That point will be more particularly examined by those to whom we make our reports. The formation in the Bad Lands is what is called the tertiary.

Thursday, June 6. — Last night the boat laid up about dark, as it would be impossible to travel on this river at night. We must have been off very early, as when I got up about four o'clock, we were under way, and some distance from our starting place. We stopped before breakfast for fuel, the procuring of which here is not like that in the States; there are here no wood-yards, with the wood all cut and in proper order, but whenever a lot of dry timber appears, if the boat needs it, she puts ashore, and all hands fall to work cutting and carrying on board; with the number of hands on board, it takes very little time. I landed and tramped about in the wet weeds, to look for botanical specimens, and got quite a number, although not in flower. Soon

afterwards we entered the Great Bend, into which the Shayan (Chenenne,) river empties; it is about five miles across, and twenty around by the river. Just below this bend, while we were wooding, six Mackinaw boats belonging to the opposition company, and from the upper country came in sight, and passed down; they appeared to be lightly laden, and were estimated to have about thirteen hundred packs of robes aboard. The slate formation appeared on the banks just above this. About twelve o'clock we passed the mouth of the Shayan, and stopped to wood just above it; it appeared to be a small stream. No specimens gathered there. Afterwards we were detained on a sand bar for an hour or two, but found it to be no annoyance, since I was engaged for a part of the morning in putting some specimens in the herbarium.

We are accustomed to speak of the Indian as the Red Men of the forest; this was true once, when the Eastern states were peopled by them, but now they are the Red Men of the Prairie. This, of such vast extent, is almost entirely destitute of timber, at least there is nothing that would be called forest, except at some places along the Missouri. To-day we have seen very little timber; most of the banks are destitute of it entirely, except the willow; occasionally a point is seen well timbered with young cotton wood. I have been told that they go from Fort Pierre, one hundred miles above, to get timber for their boats and other purposes.

The banks to-day have been bluffs, sometimes abruptly descending to the water's edge, and at other times having a beautiful intervening bottom. It appears to me that although the hills look so barren, the river is more beautiful than the Ohio, probably because of the green foliage of the willows skirting the banks, and covering many of the islands. I have several times admired the fine grass on the islands at a distance, but the grass has turned to willows on a near approach. These are islands newly formed from sand bars, and they are soon covered with a growth of young willows; this is very good for cattle and horses, and often is their only food.

I found my watch to be just one hour behind the watches from St. Louis. This led to some conversation with Mr. Picotte about the difference of time at the two places. Fort Pierre is only about ten degrees west of St. Louis, which would make forty minutes difference in time. The latitude of St. Louis is nearly thirty-eight degrees, forty-five minutes; that of Fort Pierre, forty-four degrees, twenty minutes, making it five degrees thirty-five minutes further north than the former, and four degrees twenty minutes north of Chambersburg.

I am told in reply to my questions on the subject, that the water of the river might safely be said to move with a velocity of from four to seven miles per hour, depending upon the stage of water. This corresponds very well with Col. Tilton's account.

Friday, June 7 — Six o'clock A. M. — Last night we were visited by an unusually severe thunder storm, but were not injured by it. The sun rose beautiful and clear this morning, and promises a warm day. We are within ten or fifteen miles of the Little Shayan now, which comes in from the west side of the Missouri. The banks this morning, and for several hours at the close of last evening exhibited steep, irregular bluffs, and slate formation, on the western bank, and beautiful prairie bottoms, with gently ascending bluffs on the east side. The strata of slate are generally horizontal. Went ashore last night expecting to get some botanical specimens, but found none; a plant which I had got at the last wooding place,

very much like the fox corn of my Virginia collection, was abundant. We have cut green ash timber, which the captain says is better than the dry wood we have been getting before. No locality of fossil specimens has been seen, or rather we have landed at no such place, although I have seen some that appeared worthy of an examination.

Half-past nine A. M. — The boat is now wooding on the western shore, not far above the mouth of the Little Shaven; the fuel is cotton wood, that has been killed by the fire, I would judge. Vegetation is flourishing, but flowers scarce; got one new specimen and saw several old ones; the purple violet must have abounded here, as the beds were numerous, and I took one merely as a remembrance of this upper country. Saw several frogs, but was able to secure but one of the smaller kind; have as yet seen no snakes; saw some mushrooms. Slate still continues to appear on the western bank.

This is certainly the most agreeable traveling I ever experienced; the air is delightful — the shores and trees quite green — only three of us on board, besides the Captain, who are really companions; myself, the only “distinguished” stranger, living on the best, and treated with the most generous kindness and respect — all these things combine to render the trip as delightful as possible. I can never forget the kindness that has afforded me this pleasure. The mosquitoes, however, are showing the cloven foot; they have made sundry violent attacks on my person, with malice aforethought, and intent of blood-drawing, and I have murdered numbers in pure self defence.

We have just passed the mouth of the river marked Sawarcana on the map; its most common name here is the Moreau, so called from an old Frenchman who probably lived on it once. It is a small stream, although larger than most others here. The banks of the Missouri for some miles below are gently ascending hills with round tops, and they are covered with short grass, enough, however, to give them a very pleasing appearance. The opposite bank is less hilly, but equally beautiful, and timber rare on both of them. I do not feel as persons generally expect to feel when traveling in a wild country, inhabited only by savages, nor have I so felt at any period of my traveling on the prairies, with very few exceptions. The reason of this has frequently appeared to be the almost entire absence of forests; on the prairies, early in the season, one sees large tracts of land covered with yellow grass that readily suggests the grain fields of his home; the lonely appearance of the prairie as the grass comes up reminds one of the green pastures of home, and one almost feels as if the farm house was just over the hill. It was hard to realize that the beautiful fields we saw to-day were not the fields of a cultivated farm. Just where we are the eastern side exhibits an abrupt bank, thirty feet high, composed of slate.

Saturday, June 8 — Seven o'clock A. M. — Last evening I exhibited my tabular view of the Sioux nation to Mr. Picotte for examination, and he pronounced it to be correct, except that the estimate of souls to each lodge is too small; he feels sure that eight or ten is the correct average for each lodge, and his opinion is worthy of regard.

When we landed I examined a bluff bank to confirm an opinion I had formed that certain flowers seen along the bank were the same as some about Fort Pierre, and I found myself correct. Alexander found a buffalo skeleton wanting very few of the bones, and, as it was probably, the most perfect one

that we would find, I determined to bring it on board. This morning, very early, we met six Mackinaw boats, belonging to the company, from the Yellowstone, the Blackfeet and Crow forts. They had about sixteen-hundred packs, and were under the charge of Maj. Hamilton. We had encamped only about two miles from them last night. Some of the men went out to hunt yesterday, and succeeded in frightening quite a number of elk, but got none. They are plenty in the young willows on the sand bars, and along the banks. We passed the mouth of the Grand River before breakfast. I have just been called out to see the skin of a buffalo calf that is indeed a singular thing; It has two separate heads, the bodies being joined near the tail; it has six feet and two tails, and has plenty of hair on it. It was taken from a cow in the Blackfeet country. It has been used by the Indians for a "medicine," and is not well enough preserved to be taken down. Banks not so steep as yesterday.

Eleven o'clock.—We have just been landing for wood; the first place was at a watering house of one of the traders of this company—he furnished us some wood but not enough. We then went about a quarter of a mile up the river, to a watering house of the opposition, and from that still higher to a patch of timber where we hoped to procure ash, though elm abounded most; we found ash box-elder, and sugar maple. The trading houses are built of rough logs and are intended but for one winter; they are built wherever a party of Indians happens to locate for the hunting season, and traders are sent out with an equipment according to the prospect for robes; they say "an outfit to trade ten, twenty, forty, one-hundred, &c., packs." Each pack contains ten robes. Mr. Picotte told me that about one-hundred thousand robes would go to St. Louis this season from all the traders in the country; that the Indians and others would use or destroy three times that number, probably, as each Indian must have two robes for his wearing apparel every year, besides those for a new lodge and other purposes, so that, by the calculation of an old trader, probably four hundred thousand buffalo are destroyed annually.

Six o'clock.—We have just taken our tea, and are wooding on the east side of the river; the trees appear to have been torn down, or had their tops torn off by a hurricane; they are very dry and give us good wood. Timber has been more abundant and better to-day than before; we got a large lot of ash early in the afternoon. At the landing I gathered some violets of a species different from any before seen. This has been a pleasant day again, and there is the promise of another one to-morrow.

How different does Saturday evening appear here from what it does in the east; there one is reminded that the next day will be the Sabbath—the day for rest and spiritual enjoyments, and he feels the satisfaction of having reached another period in his labor. He can stop and look back, or he can look forward and feel satisfied: but here, to-morrow will bring the same routine of travel and work.

Sunday, June 9.—This is another clear and bright morning; we are now ploughing our way not many miles below the Cannon Ball river, between beautiful banks, covered with fine grass. For the last twenty-four hours I have seen but little of that abrupt and very high bluff bank of slate and tertiary formation noticed before; the hills have been a little distance from the water and of gentle ascent, and the timber has been more abundant. One of the pilots killed a deer last evening. This morning I noticed on the west bank, large square blocks of sandstone, projecting in

strata eight or ten feet above the water's edge; they appeared for a short distance only.

Twelve o'clock. — We have just passed the mouth of Cannon Ball river; the bank above it is steep bluffs, composed of thick strata of sand stone; the opposite bank is gently rolling prairie, until it meets the hills about half a mile or a mile back.

Six o'clock, P. M. — The banks this afternoon have been, generally level, or rolling prairie, sometimes ascending gradually from the water's edge, and in other places, having a perpendicular rise of eighteen or twenty feet; these last appear to be alluvial deposite, sometimes recent, and covered with a thick growth of small timber, and again having a growth of large timber, indicating that years had elapsed since the soil had been formed. In several places high bluff banks rose from the water's edge, composed principally of sand stone, the strata sometimes very much inclined, and at others horizontal. We are now just below Apple Creek, and, on each side of the river, nearly opposite, are two small hills, entirely bare of vegetation, called the Peeled Hills; they seem to be the same formation as those in the Bad Lands.

Monday, June 10 — Six o'clock, A. M. — We are now, and have been for several hours on a sand bar, just at the head of Heart River Island; we have been working hard to get off, but we may be here all day. This island is covered with a fine growth of cotton wood. Last night, after landing, a buffalo bull was killed by some of the men, and several others were seen, the first that have been since we left. Four men started out immediately after landing to walk nearly all night and make a hunt to-day.

I forgot to notice what I had learned a few days ago of the custom of the Indians in the treatment of the aged and infirm. Hodgekiss was speaking of a certain young Indian who had been killed in battle with the Crows, and said that he had but one fault to find with him; that he would beat his old father, and that he had seen him strike the old man with a club and leave him almost lifeless. On inquiring if such was the custom, I was told that it was, and instances were cited by several to show that it was common for the Indians to leave the old to perish on the prairies. An instance was mentioned of a blind Crow Indian having been taken to a battle in the hope that he might be killed—of one very old man having been shut up in some trading house and left to perish—of an old squaw having been left in camp to die, and, being found by the traders, was kept through the winter; in the spring, being sent back to her people, she was put in a small boat and cast adrift on the river. A small boy is now at Fort Pierre, who was found by a trader and brought in; he had been left to die, because he had received a very severe injury in one of his legs, and would have been a burden to his friends. I, myself, noticed one day, on the arrival of a large band of Blackfeet, that an old man, who was said to be one-hundred and four years old, if I am not mistaken, was very badly clad, and had a wretched appearance. It seemed as if the young men had left him to provide for his own wants. This custom of neglect and cruelty to the aged does not necessarily arise from a cruel unfeeling disposition; it probably come from two causes—their views of a future state and their mode of life. The former leads them to suppose that if these aged persons die, they will go to a state of happiness and abundance, whereas now they are a burden to themselves and friends; the latter makes it a great trouble to their friends to transport them in their frequent changes

of abode, and it must be impossible for some, in their feebleness, to endure the privations and exposure inseparable from such a mode of life.

Twelve o'clock M. — For the last three hours we have been wind-bound just below the mouth of Heart river. I have taken a walk up the high bank, and found on its side three new flowers, of which I took specimens. I also secured a number of small stones, which I picked up on the tops and the sides of the bluffs; the land back of the river is rolling prairie, on the opposite shore it is low and covered with timber. A little above where the boat is, I noticed that quite a large part of the bank had sunk, some of it probably eighty feet, and some of it only forty. I approached it in descending from the high bluff beyond, of which the sunken portion must have once formed a part; the descent was steep but not dangerous, and conducted me to a plot of ground which appeared to have been broken off short from the upper part of the hill, and sunk about forty feet. The surface was mostly covered with grass, and of the same general level, although much divided by large cracks running in various directions through it, and at its edge towards the river, rising irregularly into peaks above the other part. This part I examined with some care to find fossils, but saw nothing that indicated their presence; a small yellow flower was gathered—the only place where it had been seen as yet. The formation in the side of the hill so well exposed by this great depression of a part of it was, yellow slate. I next descended to the lower part of the sunken land, towards the river. Here it was much broken up and descended by irregular steps to the water level. The same slate formation prevailed here as above, and amongst it there was quite an abundance of a crystal, specimens of which I brought with me. I walked down to the boat along the same shore, and noticed that at several places in the very high slate bluff, beneath the yellow strata formation, there were strata of what appeared to be black slate, but it crumbled to pieces when pressed slightly, and had the appearance of charred bark—a piece was brought along. The whole extent of this sunken ground was probably seventy-five yards long and forty broad. An evidence of its being recent is that an Indian trail on the hill side may be distinctly traced on the surface of the ground below. I noticed here, as at all other points along the river, the absence of animals of the snake kind; not a single snake has been seen since leaving Fort Pierre, so far as I know, and we have been in the thickest bushes, among dead trees, and have torn down old houses, but not even a rat has been seen. The young rats that I got came from an old tree in the woods.

Six o'clock P. M. — We have a delightful evening, and have just enjoyed one of the most beautiful views yet presented to us; for several miles along the west bank there extended a prairie covered with fine grass, and rising gradually to low hills at a little distance from the water. Timber is more plenty to-day. Game is abundant also; our supper table afforded most delicious buffalo steak, antelope steak, and elk meat, besides our usual dishes.

Tuesday, June 11 — Seven o'clock, A. M.—I was aroused this morning by the firing of guns in rapid succession, and the hurried tramp of men on the deck, which indicated that something was going on. On rising, I found that seven buffalo had been seen crossing the river, and the men had been firing at them. Two were killed by shots, and Mr. Picotte killed a third with the axe, cutting his back bone through in several places. They had already hauled one on board when I got forward, but I saw the drawing

up of the others, and some idea of their size may be formed, from the fact that ten men, with the assistance of ropes and pulleys, were scarcely able to get them on deck. They were immediately cut up, and, together with our former supplies, have made us rich in meat—how it would excite an epicure to be seated at our table laden as it is with such a variety of game.

I was interrupted in writing the above, and did not resume until I had finished the job I had undertaken; this was no less than to skin and preserve the head of one of the buffalo bulls. The head with the skin and flesh on it, was very heavy, as they all are, and it is not much lighter after being scraped for preservation. It required several hours constant work to skin this one and prepare it properly, and even then I had to leave it unstuffed, as nothing was to be had for this operation. I hope, however, that it will reach the east in safety, and give my friends some idea of what a buffalo looks like. While I was working on this, the boat was aground for a considerable time, and had great difficulty in getting through a very bad place. We had expected to have reached and passed Fort Clark to-day, but will not be able to do so now. The banks have not presented that abrupt steepness noticed before, but beautiful slopes, covered with the finest pasture, and occasionally a large band of buffalo grazing.

Six o'clock, P. M.—Another lovely evening, beautiful banks, and a pleasant breeze, while the boat is in motion. Expect to reach Fort Clark to-morrow morning.

Wednesday, June 12.—Last night we lay at an old Ree village, about fifteen miles below Fort Clark. During the night we had a storm, which we had been led to expect from the intense heat of the day. We had quite a storm of another kind also, although not a dangerous one. Three Indians who had been out hunting had seen us during the day, and came on board about twelve o'clock. The only injury resulting from this visit was that my brother and Mr. Picotte lost their sleep, as they had to remain up with them till daylight. I was awakened by a very eloquent part of a speech made by one of them, but soon fell again into a sound sleep.

About six o'clock this morning we came in sight of Fort Clark; it is a small fort, about one-hundred feet in length on each side, and stands on the left bank of the Missouri just below the Ree village. As we came round the bend a number of patches of ground under cultivation appeared along the river, and a very pleasing view was presented by the prairie curving inward for several miles, and the inner bank having the fort and village on it. Our arrival was marked by salutes from ship and shore, and as soon as we landed, numbers of Indians came aboard. I thought their features were more decidedly like those of the English than the features of the Sioux, and my ear immediately caught the difference in the language. If I could speak either tongue I might explain this difference, but as it is, I feel as if an opinion should scarcely be regarded. On first listening to the Sioux language, it appeared to me that to characterize it as an affectionate language would best describe the impression made upon me by its tones; in the Ree language this is not the case; I thought that it was pitched on a higher key and had a harsher sound, and yet this may not express the true difference. Their features express the same variety of expression as I before noticed in the Sioux. The Ariccarees, or Rees as they are commonly called, are said to be great thieves, pilfering anything they can lay their hands on—they are also great beggars like all other tribes. If a feast and some presents are not given to them, they injure the boat, and perhaps would take the

lives of some of the traders in the winter season. Therefore a feast of coffee and biscuits was given to all who came on board, and sugar, coffee, flour, biscuit, tobacco and ammunition were distributed amongst them, with all of which they appeared to be well satisfied. We were invited into the village, and Mr. Picotte and Alexander determined to go; although last year they had served the latter in a very treacherous manner.

One of their chiefs had gone down to Council Bluffs on the company's boat a year before, although much against the will of Mr. Picotte, who had paid him not to do so for two years before. But on this occasion he would go in spite of all opposition, and was killed by the Pawnees. The Rees blamed the company for his death, and determined to make them pay for it. On the arrival of the boat last year, Alexander was invited to a feast in the village, and went, accompanied only by the young man in charge of the fort. He found them all in a large hut armed to the teeth, and then first learned that dissatisfaction existed among them. They charged him with the murder of their chief, and in the most threatening manner, demanded pay for his blood. My brother was unarmed, and the people in the boat knew nothing of what was doing in the village. They had a stormy session at the feast, but at length all was settled by his promising to pay them two good horses; they then allowed him to depart in safety, and at the proper time he sent the horses. Amongst all the Indians blood may be paid for, which is a fact, I believe, common to all heathen nations.

To-day four of us went to the village and made a "complimentary call," as we had not time for a feast. We were received in a large mud lodge or hut, built in a circular form, having a diameter of about thirty feet. The entrance is through a small projection, corresponding in design, and somewhat in shape to our small covered porches. The lodge was airy, clean and had no unpleasant smell in the inside. The gentleman of the house received us politely, placed a mat on the ground, then four or five robes, and taking us each by the hand seated us on them. Then he ran out, and standing on the top of his house invited the people to call and see us. While they were assembling I made observations.

The Rees do not use the skin lodge. The one we had entered was of their usual fashion, and was built somewhat in this way; a circular foundation often thirty feet in diameter, is dug about twelve inches deep; in the middle of this a platform about ten feet square and twenty feet high, is made by erecting four upright posts, and on these are placed four others horizontally; then around the circular foundation are placed a proper number of upright posts, on which are again laid horizontal timbers, and against these rest small poles set very close together and one end stuck in the ground. These are probably five feet in length; then from the horizontal poles to those of the square platform in the middle, and beyond them, extend other poles laid as close together as possible, and of such a length as to form an entire roof, except a hole in the centre for the passage of smoke. On the sides and top dirt is thrown, and the house is finished. At the entrance a small projection is built of poles, extending probably six feet beyond the main wall, and covered; this protects them the better from the snow and rain. The external appearance is that of a rude cone, set on a base about five feet high, and thirty feet in diameter. On entering, you must stoop, but as soon as you pass the skin door, your head may again become erect.

We were conducted to the place of honor, opposite to and facing the

door. To our right, along the wall, were arranged several bedsteads, rudely made, while to the left, a part was cut off by a couple of poles, for the accommodation of the horses; the chickens had a coop in one corner, but roamed at large on most occasions, and the centre is used for a fireplace. The lodge was clean, airy, light and comfortable, and there was plenty of room for more than those, who I suppose, inhabited it. Behind us were hung bows with spears on the ends, and two rude instruments of music, made of a number of pumpkins. I believe something is put in the inside of them and shaken, but I have not learned the *modus operandi*. There were two squaws present, the elder of whom was very polite, the younger one stood back, either because she was the younger wife, or perhaps the wife of another man. I was quite pleased with both of them. Near the fireplace a small wooden mortar was sunk in the ground, for pounding corn. The large and high room appeared rather scarce of furniture. I have thus attempted to describe the appearance and structure of the lodge in which we were, and this is the general appearance of all others. Many persons in the States live in much more filth and much less comfort. About twenty of the men having assembled, the owner of the lodge gave us the right hand again in token of friendship, and made a short speech, which we replied to, through an interpreter, and then we left.

The village is composed of two-hundred lodges, as near as I could learn from the interpreter, and is built upon the top of a bluff bank rising about seventy-five feet perpendicular from the water. The huts are placed very irregularly, sometimes with very narrow, and sometimes with quite broad spaces between them. A number of platforms of poles, as high as the lodges themselves, are interspersed among them for the convenience of drying meat and dressing robes. I noticed a number of squaws busily employed in dressing robes. I left the village much pleased with my visit, and with the politeness with which we had been treated.

On passing to the fort, I observed a great number of hillocks scattered over the prairie, and these, I was told, are graves, this people having abandoned the old method of scaffolding their dead. Other more agreeable sights on the prairie also attracted my attention, and these were little patches of corn and pumpkins, generally enclosed by a slight bush fence. I forgot to mention that over the fire in the lodge were two bundles of what appeared to be hay tied up in skins; these, I was told, contained grains of corn put up in hay, and hung so as to be heated; if the grains germinate they are planted, and those that do not are left out. This corn is small and on small ears, but Mr. Picotte says it contains a larger amount of flour than our corn. We spent a short time in the fort, and found it to be small and the buildings old, but everything very neat and clean. I saw there a young antelope, which a squaw allowed to suck from her breasts; it is said to be quite common for squaws to suckle young animals, often raising in this manner cubs of the grizzly bear. I have noticed that they often allow their children to suckle till much older than with us. I have seen children four or five years old taking a good tug at the maternal fount.

About nine o'clock the boat was off again, having landed all her freight, and taken in some Ree corn. The hills opposite the fort and a little above it, are steep, irregular and of the whitish clay (tertiary, I think,) formation. The tops of several have a light red appearance as though they might be of pumice stone, such as I picked up last night at the landing. The hill at the village was covered with men, women and children, but as the top of

it is level, no general view of the village could be obtained. This village is one of sad celebrity; in the year 18 , it was inhabited by the Mandans, then quite a large tribe, but in that year the small pox passed over the country, and swept off nearly the whole nation. Many of them, in despair, seeing all their kindred dead or dying from the loathsome disease, cast themselves into the river from this high bluff. The small remnant of the Mandans now occupy a few lodges about five miles above the village, or have been incorporated with the Rees and Gros Ventres.

Above the Ree village stretches a fine bottom, on which I was pleased to see quite a number of squaws at work putting in their summer crop; it reminded me of some of the James river bottoms in Virginia. We are just now passing quite a long stretch of high steep bluffs on the west shore; formations like that of *hills* in the Bad Lands—strata of a red slate, like half burnt brick, and occasional spots of a slate-like substance that looks as if it had just been exposed to the fire. Probably these are the appearances that indicate former volcanic action. I wished that I could land and search for fossils.

The Rees offer many advantages for missionary labor. They have one fixed place of residence, except for a few months in winter, when they go to some other place for wood and meat, but they return again to the village at Fort Clark. They cultivate corn not only for their own use, but also enough to make it a very prominent part of trade, and they are said to be peaceable and generally well disposed. The same things are said to be true of the Mandans and Gros Ventres, and the old traders say they are more like the whites in their ways than any other Indians.

Thursday, June 13.—Last evening for miles we had on both banks, principally on the east, the very irregular steep and white colored hills mentioned before as being somewhat similar in their material to those in the Bad Lands. I noticed, however, that sand was the principal component while the white clay occurred in occasional strata only. About five o'clock one of the pilots brought me a very young Sand Hill crane which I put in alcohol, and I intend preserving the skeleton of a larger one, which was not in a condition to skin.

About six o'clock, A. M., we reached Fort Buthold, one of the company's forts, situated on the east bank of the Missouri, about sixty miles above Fort Clark. It is built on a high bluff just on the north side of the Gros Ventre village. It is a small fort and without particular interest. Mr. Kipp, who has it now in charge, has kept it in good order if we may judge from its neat and cleanly appearance. The prairie extends beautifully eastward from the village, and affords fine pasture for the horses of the inhabitants.

On the plane near the fort is the burying place, studded with many scaffolds on which the dead are placed, and also many graves in which they have been buried. Many of the scaffolds were partly broken down and had deposited their burdens on the ground where they lay exposed unsightly and forbidding. A number of skulls were kicking about the ground, and had it not been for fear of arousing the Indians, I could easily have secured six or seven good ones; as it was, I picked up but one, and wrapping it in my coat marched boldly to the boat, and got it safely in my trunk without any suspicions being excited. The village, with its mud lodges, differs nothing in looks from the Ree village described yesterday, except in one particular, that is, the inhabitants are now engaged in surrounding it with

pickets. The logs are well prepared and are all up except on the west side ; a bastion with loop holes is placed in the middle of each side. This picket is of course to protect the inmates against enemies by whom they are frequently attacked.

Between the fort and the village stands a log house which belonged to a man the Indians killed there last winter. He killed an Assiniboine and the Gros Ventres destroyed him in revenge. Many of them came on board and had their usual feast and presents, and then marched off in great glee. One of their chiefs, a tall sharp looking man, is on board going up with us, and also several others, one of whom is a Crow Indian with his family. He has been visiting at the village, and is the only one that escaped from a small hunting party that was cut off by a small war party of Sioux, a few days ago. I noticed nothing peculiar about the Gros Ventres, except that their skin was generally much lighter than that previously seen. Some of the squaws were very light, closely approaching white. Their hands and feet appear unusually small and neat, and their teeth, which are much shown, are generally good. They have bright eyes, very cheerful countenances, and generally slender bodies well fitted for activity. Their extensive corn fields show signs of industry, covering as they do, the bottom grounds. I have no doubt that a prudent, patient missionary, offering to instruct them in the arts of civilized life would be well received.

Three and a half o'clock, P. M. — We have just passed the mouth of the Little Missouri River, coming from the South ; about one-hundred and twenty miles above Fort Clark. Mr. Picotte has just confirmed what I had previously heard about the abandonment of the aged and infirm by the Indians. He says that the Indians further east on Lake Superior and Winnepeg, are worse in this respect than the Missouri Indians.

He also informed me that since he first knew them in 1820, the Mandans, Rees and Gros Ventres, had probably lost five-sixth's of their number. At the time mentioned, they were a large and flourishing people, but now the Rees and the Gros Ventres have each but one ordinary sized village, and the Mandans a very small one. The same thing is true of every tribe with a fixed place of residence. He assigned for the fact the following reasons : — When they remain long in one place the wood becomes scarce and they are obliged to encamp in winter at a distance from their residence in order to obtain fuel, but on account of danger from enemies and rise of water in the spring, they are obliged to return before winter breaks up, and to enter damp and cold houses which have been exposed all winter to the frost and snow ; consequently many, especially the young and the aged, die of colds or other disease originating in the same cause. Also when they live in villages and inhabit mud houses they are more exposed to epidemics ; and again, in a fixed position their enemies always know where to find and surprise them while working in their fields.

These are the reasons why he thinks that for years past those tribes having fixed habitations, have decreased in numbers, and besides the above mentioned nations, he cites as instances, the Otoes, Omahaws, Pawnees and several others. While these have decreased, the Sioux, a wandering people, have greatly increased, their mode of life giving them the advantage in all the particulars mentioned.

The river has been on the rise for several days, and I have frequently thought of the theory, that when a stream rises it is higher in the middle than at the shores, and consequently the drift wood floats near the shores,

while in falling water the stream is lowest in the middle, and will therefore carry the drift there. My observation on two rises in the Missouri do not confirm that theory. I noticed that the drift has always been found in the current whether that be near the shore or in the middle, and Capt. Durack confirms this opinion, saying that such is the case generally in rising and falling waters; the drift always floats in the current. The shores to-day are generally gently ascending — occasionally abrupt and of sand and white clay.

Friday, June 14. — We are still in the Big Bend, which we entered last night, and shall not be out of it until we reach Knife river coming in from the north. This I take to be the stream marked on the map, Onion creek. There is also a Knife river below, on the south side, a few miles above Fort Clark. The Little Missouri is placed wrong on the map; it comes in a few miles *below* the Big Bend, not above. This bend is about ten miles across and thirty around. The weather is windy and cloudy — buffalo are plenty; early this morning some of our hunters went a-head of our boat and killed three bulls, which we stopped to take in. Soon after this was accomplished, a small herd was discovered trying to get up the bank on the west side, having just crossed the river. Many guns were fired, and three bulls killed, which we took on board. Further on, we overtook a large herd of cows in the middle of the river, and had the engine not been stopped, we would have run them down; but as it was, all, even the calves escaped, with no other harm than a very great fright.

The banks thus far on this bend have been Mauvaise Terre. We had to-day for lunch, one of the dainties of this country — the milk gut of a buffalo roasted on coals. It tastes somewhat like white pudding, having in it a substance that when cooked has also the appearance of stuffing. Mr. Picotte in speaking of the dislike persons in the States have to such things, says, that in the north, the dung of the reindeer is eaten and very much relished, and that he himself has eaten it; it is esteemed because of a peculiar weed eaten very much by the animals and is taken out of them before being completely digested.

Evening. — Have traveled finely to-day; river continues rising; banks, prairie and bad lands; passed Knife river about noon, and this evening White river, which is about fifty miles from the British dominions, and said by some to be the most northern point of the river. We shall reach Fort Union probably on Sunday.

Saturday, June 15. — Last night we landed early, because of heavy clouds in the west, threatening a severe storm of wind and rain; it rained all night, but the storm was by no means as severe as it threatened to be. I went out on the prairie as soon as we landed, and got several new flowers for the herbarium. During the morning, the banks have exhibited frequently the burned appearance, and some of the hills have been very high, irregular and steep. About eleven o'clock we stopped to take in wood, and I had the first opportunity of examining the hills that have appeared so often, exhibiting signs of containing fossil remains. As I pushed my way along a buffalo path, through the bushes, I caught a glimpse of the first snake I have seen since leaving Fort Pierre; it was hurrying off and got away before I could overtake it. I next got specimens of several beautiful flowers growing at the edge of the woods on the small hills. I then pressed on to the large hills; they are about sixty feet high, composed

principally of thick strata of sand stone with a perpendicular ledge towards the river.

I examined along the side of one of the largest hills for fossils, but found none, except a very small piece of bone. At the base of this hill I found the large petrified roots of which No. 37 is a part; it was taken from a stump about three feet in diameter, hollow in the middle, and about six inches thick; nearly the whole stump rising about one foot above ground, still remains. Within a few inches of it are the remains of another, apparently still larger. The formation is different from that of the Bad Lands of White river. Some of the stones No. 36 came from this spot; there was quite a heap of red colored stone in this place, which exhibited every appearance of having been under the action of fire. One piece in particular, about the size of half a bushel measure appeared to have been melted to nearly a liquid state, and then stuck together. If these red places were once volcanoes, the country must have been full of them. Coal cropped out just at the base of the burnt hills towards the river. Large veins of it were seen at least once this morning, in one of the steep banks immediately above the water.

I asked Mr. Picotte about the smoking hills mentioned by Nicollet and was informed that he himself had seen smoke coming from them for years at a time, but that years ago they fell in and since then have ceased to emit smoke. They are about fifteen miles below Fort Lookout on the east side of the river.

A few hours ago we met a skiff from Fort Union, in which were Mr. Clark, of the Blackfoot Post, the Crow interpreter and two men; they were coming to meet the boat and had left the fort this morning, not expecting to meet us in several days. Alexander and Joe Howard have just left us to ride to the Fort, where they will arrive in four or five hours. We have for some time been passing along a beautiful prairie, and although the day has been very windy, the evening is calm and lovely. The sun set beautifully a few minutes ago, and it appeared as though I had got beyond sunset, for it seemed to go down almost behind us, probably because our course is more southwest.

I feel rather sad at the prospect of parting so soon with my brother who has been so kind to me. May God bless him and his for his goodness to one of the humblest followers of Christ.

Monday, June 17. — Yesterday afternoon at four o'clock the boat landed at Fort Union, having made the trip of twenty-five hundred miles in thirty-six days and four hours, the quickest one on record. We were received very kindly by the gentlemen of the post, Mr. E. T. Denig and Ferdinand Culbertson. They showed me quite a good collection of stuffed skins made by them for Professor Baird, at the request of my brother. This must have cost them a great deal of labor and considerable expense, and they deserve many thanks from the students of natural history for whose benefit this collection was made.

Fort Union is very much like Fort Pierre in its structure and about the same size, the principal difference being that here they have stone bastions, and a cannon mounted above the gate. A room also is constructed against the wall by the gate, in which they used to trade through a small hole about one foot square in the wall. Now however they trade at the retail store inside of the fort. The Assiniboines and the Crees are the people principally trading here. The Crees are from the British possessions, and

are there called *Re-nis-te-nos*; they visit the Missouri but once a year. About six lodges of the Assiniboinés are encamped at the opposition fort a few miles below, and they were all here when we arrived. This occasioned some trouble and has been near making a serious difficulty as we had two Crow Indians on board, and the Crows and Assiniboinés began hostilities a few days ago. Some of the Assiniboinés wanted to kill the Crows on board, and our gentlemen had to protect them, by putting one in the fort and concealing the other in one of the state rooms. One of these Crows is a great warrior, although still a young man; his name is the Horse-guard, and although not thirty years old, he has been engaged in about thirty expeditions, always returning with hair (scalps) or horses, and getting his party back in safety. He is a half breed and has the features of a white man. I should not judge him to be naturally a blood-thirsty man from his looks, but he is very brave and says if they would let him out in the prairie he would whip all the Assiniboinés here. His son, a fine looking boy, is with him. The Assiniboinés are here the worst dressed and meanest looking Indians I have seen, but this is partly owing to their being in mourning for the young man whom the Crows killed the other day. The cause of quarrel was this: a war party of the Assiniboinés attacked some Crows, mistaking them for Blackfeet and killed two; an attempt was made to settle the difficulty but the Crows killed a young Assiniboine who had strayed from the camp while the negotiations were going on, and now war is fully declared.

Fort Union is situated on the east bank of the Missouri, about four miles above the mouth of the Yellowstone, and has a very beautiful prairie running back of it to the hills. On the same side, just below the mouth of the Yellowstone, is situated the fort of the opposition company of which Harvey and Joe Picotte are the principal men. The Missouri and Yellowstone come together—one from the north and the other from the south, and neither makes a bend before their junction, so that it would appear like the same river did not the currents run in opposite directions; after their junction of course the stream is very large; just now the Yellowstone is the larger, although both of them are very full.

The bell is ringing preparatory to a start for a point still farther up the river. We shall probably go much higher than any other boat has ever gone. Mr. Denig was so kind as to present to me a very fine bone bow with a valuable quiver and arrows, which I shall keep as a memento of this trip.

Twelve o'clock — Eight or ten miles above Fort Union on the Missouri; country more level than below, and banks well timbered all along; hills lower, and the impression that of a more open country; bad lands appear occasionally off the river and in perpendicular banks from the water.

One o'clock. — We are now passing a small level prairie, on the west bank of the river; it is covered with fine grass and has the appearance of a beautiful meadow. Hills to the north, a mile off—light clay intermixed with white earth—rolling prairie probably beyond. At the point in the first great bend, about ten miles above the Fort, channel seven to nine feet deep, point well timbered, vegetation backward—the yellow dried grass still gives its colors to the plain, although the new grass is coming on; this has been observed for several days past. Little Muddy creek (*Bu-bue*) a small stream about ten yards wide, comes in from the north, opposite the extremity of this point.

We are now passing out of this large bend, which is about half a mile

across, and six or eight around. Ten or twelve antelopes were seen grazing quietly on the beautiful prairie, but they scampered up the hill as soon as they caught a sight and a smell of the boat. Wild geese have been seen at three different times on this bend, and each time in pairs accompanied with their young. Saw a beaver this afternoon. We are now half a mile above the bend on the south side; veins of coal in a bank fifty feet perpendicular above the river. The formation is sand stone.

Appearance of the action of fire on the tops of several hills; stones being of a red brick color. Just passing a place where there are high hills on both sides; those on the south are off from the river; those on the north are close to the water; they are high and steep with much of the red burnt clay. Wood plenty.

We are now approaching a spot on the north shore where the burnt appearances of the earth assumes a form more resembling a crater than at any other place I have ever before seen. They appear in section on the perpendicular face of the hill, the wall like appearance and the circular form may be easily traced. They are red like the remains of an old brick kiln broken in two, and the one half washed away. I do not pronounce the formations to be really the craters of extinct volcanoes, but simply wish to convey an idea of their appearance. These appearances have been seen continually to day where the hills approach the river. Coal also here appears in strata about two feet thick. The hills are formed of a soft sand stone and exhibit no soil except the burnt earth. Opposite this is a fine bottom, but the hills beyond exhibit an appearance similar to these.

Five o'clock. — We are now taking in fuel at a point on the south side, where we have the greatest abundance of dry wood. I found here the first roses I have seen — indeed the very first buds, for below this there was no signs of a rose coming out. The appearance of the action of fire still continue in great abundance on both sides. I was informed that the white earth of these hills becomes of a red color when subjected to heat. These red places do not extend far into the earth and are rarely more than five or six feet deep; below them appears the light colored earth.

Six and a half o'clock. — A little below the Big Muddy River a change takes place in the appearance on either side; on the north the hills leave the river, ascend gradually, and are covered with grass, and a broad bottom intervenes; on the south the change is similar but not so great.

We are encamped just above the mouth of Big Muddy River, about fifty or sixty miles from Fort Union. This river is probably the one marked Ibex on the map, as I can learn nothing of a river of this name from those knowing the country. There is a long and wide prairie here.

Tuesday, June 18. — This morning the appearance of the country is about the same, prairie to the north and hilly to the south; hills with short grass showing occasionally the white earth. The Mackinaw boat in tow was sunk this morning by the steamboat taking a sheer and running against the shore. Some hunters sent out last night, have just come in, and I have been so fortunate as to get an elk calf, taken from the mother, and an elk horn some weeks in the velvet, both of which I have in alcohol. I again experienced the kind liberality of Mr. Picotte, who furnished me alcohol, without which it would have been impossible to keep these specimens, as my own supply was almost entirely gone before I reached Fort Pierre. It is not the pecuniary value of the article that makes this so great a favor, but the impossibility of getting any more for a year to come.

Ten o'clock. — The country continues more even than yesterday — some fine prairie — good timber — just now passing some hills on the south side, where big horns are abundant. The hills are not as high as those seen yesterday. They are very irregular — covered with sand stone and rise perpendicularly from the water — swallows of a smaller kind than those in the states, have built their nests in the sides. A little up the river, slate appears. There is no sign of coal or of the red lands so frequently seen yesterday.

Two o'clock. — I have just returned from a short excursion to Elk Horn prairie, about eighty miles from the fort; the object of attraction was a remarkable pile of elk horns. The boat stopped and let us out about half a mile from the pile, when Messrs. Picotte, Clark, Culbertson and myself, with twenty-five or thirty men started for the horns; some ran ahead and by the time I got there one of the men had already mounted the pile and was handing down the horns. The report was that all the horns were attached to the head and that the pile was of a wonderful size. The distant view, for it was seen like a white monument several miles off, tended to confirm these reports, and I thought that here at least there had been no exaggeration. On close examination, however, I found it only about fifteen feet high and twenty or twenty-five in circumference. But even this was a wonderful pile to be made entirely of elk horns. There was not a single head to be found; the horns were piled close together, and as there were no heads the whole probably were horns that had been shed from the living animal.

What a number of elk must have been here to have furnished such a number of horns. As to the origin of the pile no certain information can be gained. Old traders say it has been here to their knowledge for twenty years, and how much longer they cannot tell. Old Indians say they are ignorant of the time or occasion of its being made. There were originally two piles, but for several years past they have been mingled into one. The prairie is from two to six or ten miles wide, and many miles long. It is further remarkable for being the place where the steamer Assiniboine, belonging to the company wintered several years ago. She had come up this far and could not get down again because of low water. In the spring she returned and was burnt, intentionally it is said, below the Mandans. We are therefore higher up the Missouri than any other boat has ever been. The country continues to be less hilly than yesterday. I procured several flowers as mementos of Elk Horn prairie.

Four o'clock. — We are aground opposite the Rivière au Tremble which comes in from the north, ninety miles from the Fort. This river is larger than any we have seen before. About an hour ago we struck the first sand bar encountered since leaving the Fort, but were off again in a moment; no snags have been seen except very close to shore. None of the high irregular hills have appeared this afternoon, but very wide rolling prairies are seen on the north side. The English name of the stream is Quaking Ash creek. A little above, nearly opposite, is the mouth of apparently quite a large stream which runs very near the Elk Horn prairie, and is known by the name of the Dry Fork. It is quite large at the mouth owing probably to the back water of the Missouri. Saline deposite in south bank. The Quaking Ash river is probably the Martha's river of the map; the traders knew no stream by this name.

Seven o'clock — We have just had some rare sport; half an hour ago a

herd of elk, fifteen in number, appeared on a bar above us ; as soon as they saw the boat they took to the river and swam across, but became alarmed, and instead of landing, gathered in a circle and remained swimming about in the water. As the boat approached them, nearly every man prepared to give them a warm salute, which they remained quietly to receive.

First, pop went one gun and then another, and another, and crack, crack, was heard for fifteen or twenty minutes, amidst shouts of the greatest excitement, while the elk started for the other shore, the blood spouting from most of them — one would lag behind, and then another and down stream they would float wrong side up. Captain Bryuly, the second pilot, took long aim at one, and I thought he had missed, but in a moment up went the poor fellow's heels in the air, and he made a grand flourish in the water, but at last was obliged to give up the ghost. Meanwhile, old Mr. Picotte was off in the yawl, sword in hand, after the wounded and to bring in the dead. The sight was most exciting and amusing ; the old man sat straddling the bow of the boat, coat off, flourishing his sword, ready to plunge it into the first elk he could reach. One poor animal wounded in the back, was struggling to get away, and after him they put ; stick went the sword, but in it would not go ; the old gentleman had not examined the point, and on trial, it was found dull as a beetle. But he was too old a hunter to be foiled in this way, and the bow of the boat was again turned to the elk ; now they are on it and Mr. Picotte seizes it by the tail, pushing his small knife up to the handle in its side. The elk kicked and scuffled, but it was of no avail, and soon was on the deck and its hide unshipped, as one of the men called the operation of skinning. Meanwhile, a fine doe had been skinned and cut up on the forward deck, and the same operation was being performed on the stern, so that now three fine elk were on the boat. The yawl again went after another one, and returned with the only buck I noticed in the band, so that we got four ; three others were killed, but were carried off by the current, and my own impression is that all the others were wounded. The horns of the buck were in the velvet state, but were very much injured. I shall get two or three skulls.

Encamped at the side of a very extensive and level prairie to the north side eleven points from Milk River — cloudy and signs of rain.

Wednesday, June 19 — Six o'clock. — The sun arose clear this morning but now it is a little hazy. We are all still pushing up stream ; face of the country is rather more even ; low hills on both sides generally off from the river.

Ten o'clock. — Had a long talk this morning with Mr. Clark on the subject of Indian customs. I was surprised to hear what he told me of the language of signs used by nearly all the tribes except the Sioux and Assiniboines. It must be as perfect and expressive as the language of mutes with us ; by these signs one Indian can tell another the principal events of his whole life and will be perfectly understood. And this does not come from the barrenness of their own language for it is sufficiently expressive, but Mr. Clark thinks it to have originated principally from the fact of the Indians not knowing when they meet a man, whether he be a friend or an enemy ; they do not know whether to let him approach or not and by these signs he can learn all about him, though he be too far off to converse with the tongue. It is therefore the language of caution and defence.

These signs are beautiful and poetic ; the rude figures which we see sometimes on buffalo robes are not mere awkward attempts at ornament,

but they are hieroglyphics, as easily read by an intelligent Indian as words by us, and perhaps containing a whole history of some great event.

The Blackfeet do not place their dead on scaffolds but either in a hole well covered to keep off the wolves, or they leave them in the lodge with everything just as it is when they die. In that case the wolves of course eat their bodies very soon; and I am told that in this way the body of nearly every Blackfoot is disposed of. When one of them is in mourning he puts white earth on his head and goes out before his lodge wailing most piteously; as soon as the neighbors see that they all rush to his lodge and take it and everything it contains, leaving him nothing but his horse. The death of a relation is therefore a very serious affair, since a man loses all his property as well as his friend. How different with us—where a man frequently gains property with the death of a relative.

A Blackfoot has complete power over his wife; if he finds her unfaithful, he generally cuts her nose off, but he can shoot her down if he chooses to do so, and it is said that it is very common to see good looking young women going about *noseless*. If a man loves his wife and wishes to overlook any indiscretion of this kind, her own brother may walk into the lodge and say "it is only to-day that you have made me ashamed," and shoot her dead before her husband's face, while he can say not a word. The Blackfeet are taught to beg from their infancy and are adepts in the art.

Six o'clock. — We have just started, after the longest detention we have had except for business; we reached this point about twelve o'clock, and have been here ever since fixing one of the wheels. However, the time was not lost, for the hands have cut enough of wood to take us down to the Fort, and will not have to detain for that purpose after we have unloaded.

Milk river is said to be about twenty-five miles distant, but we would have reached it to-day, had we not been detained long. The face of the country to-day has been generally rolling prairies, frequently stretching many miles from the river. About eleven o'clock we passed the outlet of a lake or pond a short distance to the north of the river. In twenty-four hours we shall probably have our face turned homewards, when I shall hurrah for the States.

We have just passed the outlet of a lake which, according to one account is the same as that mentioned this morning; but according to another, it belongs to a different lake — if there be but one, it must be ten or twelve miles long. A part of it could be seen when we reached the end of the wood, and it is narrow like a creek and winds considerably. The woods are known as the places where the free men, (those not in the employ of the company,) built themselves a fort, and the lake is sometimes called *Free-men's lake* from that circumstance.

This lake is in one of the most magnificent prairies I have seen; we are still opposite it, and it sweeps away for miles, at first very level and then terminating in hills, gradually rising and covered with grass. To the south a fine prospect is also seen, but then the hills rise from the river and in the distance black spots show that buffalo are there. The bute at Milk river is now easily seen. Just passed a small stream called the Little river, coming in from the south, marked but not named on the map.

Thursday, June 20 — Eight o'clock. — This morning we were off as usual, about half-past three o'clock; soon afterwards passed a small stream on the south, generally called Dry Fork, though at present it contains water. At half-past seven o'clock we passed Porcupine river coming in

from the north ; it is about twenty yards wide, no wood at the mouth, and as far as we could see, very little along its banks. It comes in at the upper end of Porcupine cut off, sometimes called Harvey's cut off. During all this morning we have a continuation of the prairie country seen yesterday, especially on the north side there has been beautiful rolling prairie all along excepting occasional timbered points ; to the south low and scantily herbage hills have run close to the river.

This Porcupine river is the place from which the military expedition under the command of General Atkinson in 1825, turned back. He wintered at Old Council Bluffs, and in the spring ascended with nine keel boats. A part of his company went by land as far as Milk river. The object of the expedition was to treat with the Indians. The river to-day is still in a good stage, but we have had to cross frequently to keep the channel.

There is always plenty of water here, say those familiar with the place, but the only trouble is to find the channel. The boat is now light and has passed over some places where only two and a half feet of water was sounded ; rather hard scratching however.

A large band of buffalo cows with their calves were crossing just above the mouth of the Porcupine, but Mr. Picotte would not allow the men to shoot ; we passed very close to them all and it was amusing and touching too, to see the very great fear they exhibited as they in vain struggled to get up the steep bank. I noticed here for the first time, what I had been told before, that the buffalo grunt almost exactly like a large hog ; had a person heard and not seen he could easily have thought that a drove of swine was passing. The men tried to catch some calves with a lasso but did not succeed. Buffalo have been seen in great bands for several days past ; last evening probably five-hundred were in sight at one time on the river banks. I have seen paths beaten by them which look like travelled roads in a thickly settled country, and paths of this kind are seen at almost every landing.

Twelve o'clock. — We are now on the point immediately above Milk river and will go a short distance higher up to find good timber for building a boat. Milk River comes in from the north, and is at least two hundred miles above Fort Union. Mr. Clark says that it passes within a hard day's ride — about forty miles — of Fort Benton, and if so it must be incorrectly laid down on the map. Some miles below I saw the first grizzly bear of the season ; this is unusual as they are generally seen below Fort Union ; and Kelly, an old hunter, told me that the reason they are not seen on the river now, is that they are out on the prairies after the pomolanche or prairie turnip, of which they are very fond.

We passed a few hours ago some black slate hills on the south side rising directly from the water ; the sides in several places were marked by the buffalo tracks so as almost to resemble slate roads, and to cause one to feel as though he was in a much traveled country.

The boat has been about twenty-seven hundred miles above St. Louis, and a board was nailed on a large cotton wood tree near the shore, with the following inscription : " N. B. El Paso, landed here June 20, 1850, thirty-five days from St. Louis — John Durack, Captain." The thirty-five days is the running time. This day at twelve o'clock, we were forty days out from St. Louis. I really feel very thankful that my life and health have been spared me during this journey. I have reached a point to which few, except traders have attained, and I hope that I have gained some valuable

information as well as restored my health. But it is a long distance, nearly four thousand miles to my home, and no one can tell what may befall me, but my duty is clear and I hesitate not to go even at the risk of the cholera. Should it please Divine Providence to restore me to my home and my studies, it is my sincere prayer that it may be to employ my powers and my knowledge as a minister of the Gospel.

Huzza for home! Here we are driving at half past three o'clock down stream as fast as steam will let us. Our shouts of farewell have hardly ceased to ring in these old hills that so seldom resound with the voice of whites, and now for the first time have heard the puff of a steamboat. We stopped at twelve o'clock several miles above Milk River on the southern bank, landed all the freights for Fort Benton and have turned our face homeward. It was a picturesque scene as we rounded to, all hands on the hurricane deck — the crew singing one of their peculiar songs — the cannon firing and ourselves giving three good hearty cheers, while the shore with its green carpet was covered with merchandize — the different families bivouacking under the scattered and venerable trees, and the men who were bound for the Blackfeet, returning our cheers and salute with hearty good will.

Friday, June 21 — Six o'clock A. M. — We are now perhaps, half way back to Fort Union, and if we meet with no misfortune, shall probably be there early this evening. The day is clear and pleasant and we are having a delightful ride.

Eight o'clock. — We are now stopping at the prairie on which is the large pile of elk horns mentioned a day or two ago. Old Mr. Picotte has the notion into his head, of taking the whole pile to St. Louis, and soon this noted, and almost revered land mark will be on the hurricane deck of the El Paso. All on board, excepting the old gentleman himself, would prefer to leave it untouched, especially as the horns are not in a good state of preservation. The river is falling and we shall have no time to lose.

Adopted relations among the Blackfeet are very frequent and of the most sacred character; two young men become comrades, and then they are friends by the closest ties, and it is a greater disgrace for a comrade to lose his friend in battle or want of bravery or skill, than to lose a younger brother. Whenever they are together for any time, they exchange presents.

The mere glimpse I have gained of Indian customs, convinces me that to acquire any philosophical and valuable knowledge of them, a person must live with them for a time. From such men as Mr. Picotte, Mr. Meldrum, Mr. Clark and my brother, he may gain a great deal of information, but no questioning can place him in possession of all the facts, because he does not know what to ask, and if he did, these men not being accustomed to definitely communicate their knowledge, often so speak as to convey an exaggerated impression without any design to deceive. Constantly customs of which I had no idea, are mentioned in conversation, so that it is my opinion that in order to a proper appreciation of the Indian, a long residence among them is necessary.

Friday, Six o'clock, P. M. — Arrived at Fort Union again about four o'clock having had a most delightful trip to Milk River. The river has been falling, but as the weather is again oppressively hot, we look for more water, although there is still plenty to run down on. We shall be off early in the morning, and I feel glad to move on homeward as fast as possible; nothing could induce me to live here. I feel sad at heart to part with my

brother and I know that I shall be lonely to-morrow without him. May all his kindness be returned to him tenfold.

Saturday, June 22. — The boat moved from Fort Union across the river for wood about half past three o'clock, and about that time we had a very fine shower of rain. At half past seven o'clock we moved off, firing a salute to the men belonging to the fort who had come over to help us take in fuel, Alexander was with them and the last sight I had of him he was standing up in the boat which was just pushing off.

We have not made a very good run to-day because of the wind being against us this afternoon and the wood has been bad. A good deal of bad land appears on both sides of the river, and much of the burnt earth with it; this often appeared on the sides of grass-covered hills, and in hills rising directly from the prairie, as well as in its usual position in the white land hills.

While it is difficult for one not skilled in such matters to refute the common belief that the red burnt-like earth is the result of the action of fire, it is well to mention some circumstances that at least throw some improbability on that theory; the first is that if these red looking places were craters, the whole bank of the river must have been volcanoes for hundreds of miles, with few exceptions — they occur in almost unbroken connection for miles, and above Fort Union there is one place where they thus appear almost continually for twenty or thirty miles, being there much more frequent than lower down. Another is, that so far as I can see, these hills exhibit no other evidence of the action of fire; there is not a single sign of volcanic action that I have seen around these places, either in the formations of the hills or in the stones on their surface.

And again what appeared to me very singular on the supposition of volcanic action, has been that these crater remains, or volcanic remains do not extend deep into the earth; in some places they look no deeper than a modern lime-kiln; in others they appear almost as a stratum placed in between the other formations, and in all they have other formations below them, and in many above them. I regret very much that I cannot describe the geological formation of these hills.

Monday, June 24. — Yesterday we passed Fort Berthold, the Gros Ventre Fort, and came within fifteen miles of Fort Clark, the Ree Fort at the old Mandan village. On the map there is a Fort Mandan marked nearly opposite Fort Clark; this is probably the Fort built by Lewis and Clark for their quarters, when they wintered with the Mandans. I noticed yesterday a thick vein of coal in the bluff on which the Gros Ventre village is built.

Tuesday, June 25. — This is one of the few rainy days we have had, but is not uncomfortable, as we are well protected in the cabin and at the same time are moving along slowly towards home. There has been a good deal of detention from running on sand bars, and in looking for the channel. A few hours ago we passed Heart river, and at the place where we were aground so long when going up we stuck again, injuring one of the wheels.

Thursday, June 27. — Yesterday was nothing more than a bright pleasant day, passed in grounding, backing, wooding and going a few miles a-head. The night previous, we had landed at a place that ought to be called Musquito hollow, if we may judge from the complaints made by every one. I never suffered so much from them, and could not get to sleep until past midnight; others were forced from below to the hurricane deck,

and there passed the night as best they could. The day was marked by another event also worthy of record—the death of my porcupine. I had the skeleton preserved.

In the evening when we landed, Mr. Picotte was seen running up a very steep, high bluff, and while we were admiring his activity he called to us; we all at once started off, supposing he had seen game. Mr. Clark taking his rifle, and Ferd his knife; but on coming up to him we were much amused to hear the old man instead of pointing out the game, ask us to slide down the hill to the water's edge. Fortune favored me at this place, for as we descended the hill, I saw for the first time in my life, the cactus in bloom. It was a most agreeable surprise to find this unsightly plant which is the great annoyance of moccasined voyageurs adorned with flowers of a fine straw color. I secured several of them although none appeared to be in full bloom; how to preserve them is a great difficulty with me, for so much of the fleshy substance must go with the flower, that it is almost impossible to dry it. The structure of the flower, also was full of interest to me, so that on the whole, I thought I had secured a real prize.

At night I listened with great pleasure to a long conversation between Mr. Clark and Mr. Picotte, on Indian customs and language, and I regret that I cannot record it fully. They mentioned the great generosity of all Indians manifested in their disposition to give presents, and so great is the desire to do so, that they will even steal to gratify it; the same generous disposition is remarked in nearly all half breeds. Politeness amongst them, assumes some very singular forms; for instance, it is a mark of great respect for an Indian to pass his plate with the remnant of his meal to any one who may be with him; this I have observed at the feasts, and have seen it in the half-breeds constantly. And it is the very quintessence of politeness for an Indian who is drinking liquor, to fill his mouth and then pass the contents to his friend's mouth from his own. The Indians notice the manner in which they are treated by the traders, and think it rather strange—say they, “we give you the best food and the best robe, while you give us poor food and put us in another room to sleep.” “Well,” reply the traders, “the reason is, that there are so many of you, and so few of us, we cannot afford to find you all, as we feed ourselves, and if we feed one of you better than another, jealousy is produced.

The Indians in their intercourse like to see a man well dressed because it shows respect to them, and they despise a man who adopts their own costume; they are conscious of, and admit the white man's superiority, and have mind enough to despise the man who lowers himself to them. They all make it a point to dress in their best when they reach a fort, except the Assiniboines; and Ferdinand says that if they are not dirty before they get near the fort they make themselves so purposely.

The Indian name of the Gros Ventres is Minetaree—the people of the willows—the Aricarees call themselves Corn Eaters, and the Mandans have no translation for their name. Mr. Clark mentioned a difficulty in acquiring an Indian language worthy of notice, namely, that the women and men use a language so different that after acquiring one you would almost be ignorant of the other—that the men would pretend to be entirely ignorant of many words which the women use, and these are not words peculiar to feminine dress or habits, but the names of very common articles and acts. This is doubtless owing to the social position of the female—their interest is separate from that of the men, and they are made to feel

that they are regarded as inferior beings. There is a difference in the language of the male and female even in civilized life, but this arises from a very different reason — from the superior refinement of the latter.

It was remarked as an instance of politeness of an Indian gentleman, that he never laughs at the awkward attempts of a white to speak his language, but on the contrary will compliment him on his success, and if a squaw breaks out into a laugh, as they sometimes do at the slightest mistake, he rebukes her and tells her she does not know how to speak her own language. This reminded me of the conduct of the Chinese to our missionaries in listening to their first attempts at preaching.

We spoke a little of the importance of a good half-breed school on this river, and every one present gave it as his opinion, that an effort to establish one would meet with encouragement. It is said that there are probably one hundred and fifty children whose parents were able to pay sixty or eighty dollars a year for their schooling.

Evening. — Stopped about thirty miles above Fort Pierre—have therefore made a poor run to day, and had a great deal of grumbling. The western bank has been almost a continuous bed of slate, thirty to forty feet high. I went ashore, and found the bottom covered with a vine bearing a pretty specimen of bindweed, and have preserved some good specimens; it differs from the beautiful pure white bindweed of Virginia, in having running vines and a purple tinge on the petal.

Friday, June 28.—About ten miles below Fort Pierre—home seems to be approaching quite rapidly, and we are now only about three thousand miles from it, and no cholera in the states, as we understand. We reached the Fort at about nine o'clock this morning, and left at two P. M. I was glad to see again my acquaintances.

Mr. Picotte here left us, and we are to make the rest of the trip without him. He has been very kind to me and asked me to remain with him this summer, but this was out of the question. In leaving the Indian country, I must record my acknowledgment of the very many acts of kindness and hospitality extended towards me. The gentlemen, particularly of the Fur Company, have uniformly treated me with kindness and attention.

Saturday, June 29.—Last night closed in with clouds indicating a shower, and a fine rain fell during the early part of the night. Called by Mr. Pattick about five o'clock to see the opposition boat, which was in sight. All hands got up, and in about half an hour the two boats were opposite one another in the stream, but not a word was exchanged—thus we passed, twelve hundred miles from home, and did not extend the slightest salutation; so much for opposition in trade. It was the *St. Ange*, a fine boat, owned and commanded by Captain Joseph Lebarge. There were several ladies on board, and my eyes were delighted with the sight of a beautiful face and fine figure for the first time in some months. A great many high slate hills on the west side this morning.

Monday, July 1.—On Saturday night we camped a short distance below White river, and had something of a blow again. Yesterday we passed the *L' Eau qui Court* and encamped below it, and now at about ten o'clock, Monday morning we are pushing down stream quite rapidly below the river *A' Jacques*. It had been my intention to have noticed with some particularity the face of the country below Fort Pierre, but as it has been carefully examined by scientific men with instruments, and reports made on it, it appears to me scarcely worth my while to do so, and besides this it is

impossible for me to give an accurate account of the geological formation from observing it as the boat passes swiftly by. I have noticed the limestone mentioned by Nicollet and seen it in fine strata lying above slate; if this stone is hard enough, it would be admirable for building. I think it too soft however, although I have not yet been able to secure a specimen.

These slate and limestone rock occur in very high steep bluffs rising almost perpendicularly from the water, except when bars or narrow bottoms intervene; they also often exhibit evidence of the presence of sulphur and iron; they do not occur in one unbroken succession, but they cross the river very frequently, being seen now on one side and again on the other, but never, so far as I remember, appearing on opposite sides at the same place. They do not occur in unbroken succession ever on the same side of the river, but most generally appear as the sections of a series of short hills with ravines between, and these ravines having in them grass and scrubby trees, frequently cedar. I noticed many swallow nests in these high banks.

I have looked with some care for the pseudo volcanoes of Nicollet; we passed the one in the bend below White River very early in the morning, and I did not see it to my disappointment, but I noticed several places in the banks which I supposed he called volcanoes, as they presented the red burnt-like appearance noticed so often about Fort Union. One of these places passed yesterday on the west bank, had so much the appearance of having been caused by fire as to make the Captain exclaim—that must have been a very recent fire. We are again getting into the region of snags, but we have made fine running yesterday and to-day. Hurrah for home!

Tuesday, July 2.—We reached the Vermilion post yesterday at twelve o'clock, and was welcomed by Mr. Larpenter. We were detained there all the afternoon to take in packs, and at night we lay at the island opposite and took in wood. I got two pairs of black tailed deer horns, and was offered a young skunk, which I declined; there are two on board, really beautiful little creatures and full of play. This morning we had made forty miles before breakfast and have some hopes of being in St. Louis by Sunday.

Wednesday, July 3.—We spent the night a little below old Council Bluffs, and this morning soon after breakfast were at Bellena, and saw for the first time in some months a settlement of whites. Yesterday the hills for the first time were seen covered with timber and presented quite a pleasing contrast with the bare bluffs of the upper river. To-day we are hastening along and may reach St. Joe to-night.

Friday, July 5.—Yesterday was passed by me delightfully, because I was hurrying home as fast as steam could carry me. We passed St. Joe about ten o'clock, making only a short stop. I there got the skull of an Assiniboine chief from Mr. M'Donald. We passed several towns but stopped only once, at Parkville; we met several steamboats bound upward. This morning it is oppressively hot.

Saturday, July 6.—My trip has at last ended, so far as the Indian country is concerned. The El Paso landed about two o'clock, all in good health and spirits and glad to get home. I desire to feel very grateful to Divine Providence for my safe return and restored health—may the knowledge gained be all employed in promoting God's glory.

APPENDIX.

As already stated, Mr. Culbertson collected numerous specimens of Natural History during his recent expedition. Among these was a series of plants, a list of which as drawn up by Professor Thomas C. Porter, of Marshall college, Mercersburg, is subjoined. A list of the birds and mammalia of the Missouri river, from Fort Leavenworth to Fort Union at the mouth of the Yellowstone, has been kindly furnished by Mr. Edward Harris, of Moorestown, N. Jersey, and includes many species not seen by Mr Culbertson. Mr. Harris visited the Upper Missouri in 1842, in company with the distinguished naturalist, Mr. J. J. Audubon, recently deceased, for the purpose of assisting the latter gentleman in procuring materials for his valuable work on the mammalia of North America. No systematic catalogue of the kind has ever been before presented, although detached notices may be found in the narrative by Maximilian Prince de Wied of a journey along the Missouri to the Rocky mountains in 1832.

The concluding part of the appendix contains some valuable information on the numbers and distribution of the Indians of the Upper Missouri. This is arranged in a tabular form, accompanied by explanations, and is published as left by Mr. Culbertson.

S. F. BAIRD.

LIST OF PLANTS COLLECTED BY MR. CULBERTSON:—BY PROFESSOR THOMAS C. PORTER.

RANUNCULACEÆ.

- Anemone pennsylvanica*, Linn. Common in moist grounds along the Missouri. June 17. 56, 82.*
Thalictrum dioicum, Linn. Staminate plant. Missouri river, June. 76.
Thalictrum cornuti, Linn. Low grounds along the Missouri. Five feet high. June 27. 112.
Delphinium azureum, Michx. Grassy bank opposite Fort Lookout. June 29. 108.

BERBERIDACEÆ.

- Leontice thalictroides*, Linn. *Sine fl. et fr.* Pinon's spring, west of the head of Bad river. May 11. 2.

CRUCIFERÆ.

- Sisymbrium canescens*, Nutt. Frequent near Fort Pierre. May. 26, 29.
Erysimum asperum D. C. Abundant around Fort Pierre. May, June. 40.
Vesicaria ludoviciana D. C. Elk Horn Prairie. 72, 91.
Vesicaria (undetermined.) Prairie. May. 9.

VIOLACEÆ.

- Viola encullata*, Ait. May. 18, 21.
Viola Nuttallii, Pursh. Valley of the Missouri. May 15. 10, 11.

LINACEÆ.

- Linum rigidum*, Pursh. Low grounds near Fort Pierre. June. 67.
Linum pereune, Linn. Near the mouth of Milk river. June 20. 93.

OXALIDACEÆ.

- Oxalis stricta*, Linn. Bank of the Missouri below Fort Clarke. June 23. 104.

* The numbers are those attached to the specimens.

ANACARDIACEÆ.

Rhus toxicodendron, *Linn.* Bank of the Missouri. June. 58.

MALVACEÆ.

Malvastrum coccineum, *Gray.* *Pl. Fendl. p. 34, and Gen. Ill. t. 219.* (*Sida coccinea*, *Nutt.*)
Dry soil, near the mouth of the Yellowstone. June 15. 80.

VITACEÆ.

Vitis riparia, *Michx.* Banks of the Missouri. June. 65.

POLYGALACEÆ.

Polygala alba, *Nutt.* (*P. Beyrichii*, *Torr & Gr.*) Opposite Fort Lookout. 110.

LEGUMINOSÆ.

Vicia americana, *Muhl.* Common along the Missouri, above Fort Pierre. 105.
Lathyrus linearis, *Nutt.* Banks of the Missouri; frequent. 17, 95.
Lathyrus polymorphus, *Nutt.* Very abundant on hills and low grounds. Fragrant. May. 12.
Amorpha nana, *Nutt.* Common around Fort Pierre; 18 inches to two feet high. May. 38.
Dalea (undetermined.) *Sine fl. et fr.* Bank of the Missouri. June. 62.
Psoralea esculenta, *Pursh.* "Prairie turnip." Near Fort Pierre. May. 42, 43, 68.
Astragalus caryocarpus, *Ker.* *Sine fr.* Common. May. 24.
Astragalus racemosus? *Pursh.* Elk Horn Prairie. June 18. 93.
Astragalus (undetermined) June 20. 100.
Oxytropis Lambertii, *Pursh.* Dry hills on the prairie. May 16. 8, 84.
Phaca neglecta? *Torr & Gr.* (Specimen imperfect) Near Fort Lookout. June 29. 111.
Thermopsis rhombifolia, *Nutt.* On the Missouri above Fort Union. 92.
Lupinus pusillus, *Pursh.* Upper Missouri. 88.

ROSACEÆ.

Prunus americana, *Marshall.* Middle of May. 14.
Potentilla pennsylvanica, *Linn.* Low grounds; one hundred and twenty miles above Fort Union. June 19. 96.
Potentilla anserina, *Linn.* Above Fort Union. 97.
Rosa blanda, *Ait.* Low grounds and woods; forty miles above Fort Union; very abundant. June 17. 101, 102.

ONAGRACEÆ.

Enothera caespitosa, *Nutt.* Very common on the sides of barren hills, near Fort Pierre. End of May. 31.
Gaura coccinea, *Nutt.* Hills near the river, above the mouth of the Yellowstone. June 15. 79, 89.
Gaura (undetermined.) Perhaps a variety of *G. coccinea*, *Nutt.* Near Fort Pierre. June 49.

GROSSULARIACEÆ.

Ribes aureum, *Pursh.* Bank of the Missouri, near Fort Pierre. May. 15, 69.

UMBELLIFERÆ.

Nos. 1, 7, and 46, (in fruit,) (undetermined.)

CORNACEÆ.

Cornus stolonifera, *Michx.* Abundant on the banks of the Missouri. 51, 85.

CAPRIFOLIACEÆ.

Symphoricarpos, (*fol.*) Wet grounds along the Missouri. 60, 70, 99.
Viburnum lentago, *Linn.* Abundant on the Missouri. 74.

RUBIACEÆ.

Galium boreale, *Linn.* Dry bank on the Missouri fifty miles below the mouth of the Yellowstone. June. 81.

COMPOSITÆ.

- Achillea millefolium*, Linn. Elk Horn Prairie, and above Milk river. June 18 and 20. 87, 103.
Artemisia frigida, Willd. (fol.) Prairie just below Fort Pierre. 23,
Senecio (undetermined) Common on the Prairies about Fort Pierre. May 30
Cirsium undulatum, Spreng. (fol.) River bank just above Fort Pierre. May. 37.
Lygodesmia juncea, Nutt. Opposite Fort Lookout. June 29 109.
Troximon cuspidatum, Pursh. Wet ground and prairie around Fort Pierre. May 44.

PRIMULACEÆ.

- Lysimachia ciliata*, Linn. Moist grounds, Upper Missouri. June 27 114.

SCROPHULARIACEÆ.

- Pentstemon* (undetermined.) Elk Horn prairie. 90.
Pentstemon (sp. nov?) Rocky Hill near Fort Pierre. 28, 73.
Castilleja sessiliflora, Pursh. Elk Horn prairie on the Missouri, about eighty miles above Fort Union. June 18 83.

VERBENACEÆ.

- Verbena bracteosa*? Michx. About the holes of the prairie Marmot. May 39, 22.

BORAGINACEÆ.

- Lithospermum*? Bank of the Missouri river. June 77.
Myosotis glomerata, Nutt. Near Fort Pierre. May 27, 45.
Mertensia (undetermined) Dry prairies. May 3, 4.

CONVOLVULACEÆ.

- Calystegia sepium*, R. Br. Wet grounds on the Missouri. June 27 61, 107.

APOCYNACEÆ.

- Apocynum cannabinum*, Linn. Moist low grounds, eighty miles above Fort Pierre. June 17 113.

ASCLEPIADACEÆ.

- Asclepias sullivantii*, Engelm. Wet meadows on the Missouri; common. May 32.

SANTALACEÆ.

- Comandra umbellata*, Nutt. Just below Fort Pierre, and bluffs near the mouth of Heart river. May, June 23, 71.

SALICACEÆ.

- Salix longifolia*, Muhl. (pist. fl.) Very common. June 52.
Salix, (undetermined.) Stam. fl. Abundant on streams and sand bars; Upper Missouri. May 13.
Populus lævigata, Willd. Valley of the Missouri. S. fl. and fr. 51.

IRIDACEÆ.

- Sisyrinchium bermudiana*, Linn. Prairie above Fort Pierre. June 12 106.

SMILACEÆ.

- Smilax herbacea*, Linn. (Stam. pl.) Near Fort Pierre. May 41.

LILIACEÆ.

- Smilacina stellata*, Desf. Very common in wet places along the Missouri. June 55.
Allium (undetermined.) (fl. only.) Perhaps *A. stellatum* of Geyer's collection. 20.

COMMELYNACEÆ.

- Tradescantia virginica*, Linn. High dry bank just below the mouth of Heart river. June 10 86

CYPERACEÆ.

Carex stricta, Lam. Wet sand; Upper Missouri. June 75.

GRAMINIEÆ.

Elymus, (undetermined.) Elk Horn prairie. June 18 94.

EQUISETACEÆ.

Equisetum arvense, Linn. (Sterile plant.) Common along the Missouri. June 50.

LIST OF BIRDS AND MAMMALIA FOUND ON THE MISSOURI RIVER FROM FORT
LEAVENWORTH TO FORT UNION, AT THE MOUTH OF THE YELLOWSTONE
RIVER, BY EDWARD HARRIS, ESQ.

(The Species marked with an asterisk were seen on the lower part of the river; the rest were higher up towards Fort Union.)

BIRDS.

- Cathartes aura*, Ill. Turkey Buzzard.
Buteo swainsoni, Bp? Common Buzzard.
Archibuteo St. Johannis, (Om.) Black Hawk,
Aquila chrysaetos, Golden or Ringtailed Eagle.
Haliaeetus leucocephalus, Sav. Bald Eagle.
Pandion carolinus, Bp. Fish Hawk.
** Nauclerus furcatus*, Vig. Swallow tail Hawk, (above Council Bluffs.)
Falco peregrinus, L. Duck Hawk.
spurcerius, L. Sparrow Hawk.
Circus uliginosus, Wils. Marsh Hawk.
** Athene cunicularia*, Bp Burrowing Owl.
Bubo virginianus, Cur. Great Horned Owl, the whitish variety.
Antrostomus nivalis, Aud. Poor Will.
Chordeiles virginianus, Sw. Night Hawk.
Acanthylis pelagica, Chimney Swallow.
Hirundo purpurea, L. Purple Martin.
lunifrons, Say. Cliff Swallow.
bicolor, Vieill. White bellied Swallow.
rufa, Om Barn Swallow.
** serripennis*, Aud. Rough winged Swallow.
Tyrannus verticalis, Say. Arkansas Flycatcher.
crinitus, Sw. Great crested Flycatcher.
intrepidus, Vieill. King Bird.
Tyrannula sayi, Sw. Say. Flycatcher.
Setophaga ruticilla, Sw. Redstart.
Sylvicola aestiva, Sw. Yellow Warbler.
Trichas marilandica, Bp. Maryland Yellow Throat.
Helminia peregrina, Aud. Tennessee Warbler.
Mniotilta varia, Vieill. Black and White Creeper.
Troglodytes obsoletus, Say. Rock Wren
edon, Vieill. House Wren.
Parus septentrionalis, Harris. Long tailed Wren.
Sialia arctica, Sw. Northern Blue Bird.
Mimus carolinensis, L. Cat Bird
rufus, Bp. Brown Thrush.
Turdus migratorius, L. Robin.
Wilsonii, Bp. Tawney Thrush.
Seiurus auricapillus, Sw. Golden Crowned Thrush.
noveboracensis, Bp. Water Thrush.
Agrodonia spraguei, Aud. Sprague's Lark.
Otocoris rufus, Western Sky Lark.
Plectrophanes pictus, Sw. Smith's Lark.
ornatus, Towns. Chestnut-collared Lark.
Chondestes grammacus, Bp. Lark Finch.
Zonotrichia graminea, Sw. Grass Finch.
leucophrys, Forst. Sw White crowned Sparrow.
** Zonotrichia querula*, Nutt. Harris' Finch.

- Spizella pallida*, Bp. Clay colored Bunting.
socialis, Bp. Chipping Sparrow.
 * *Passerculus savanna*, Bp. Savannah Sparrow.
 * *Coturniculus henslowi*, Bp. Henslow's Bunting.
Lecontei, Aud. Leconte's Bunting.
Bairdi, Aud. Baird's Bunting.
- Spiza amoena*, Bp. Lazuli Finch.
Carduelis tristis, L. Goldfinch.
Pipilo arcticus Sw. Arctic Towhee.
 * *erythrophthalmus*, (L.) Towhee.
- Corydalina bicolor*, (Towns) White shouldered Sparrow.
 * *Erythropsiza purpurea*. Purple Finch.
- Guiraca coerulescens*, Sw. Blue Grosbeak, above Council Bluffs.
ludoviciana, Sw. Rose breasted Grosbeak, above Council Bluffs.
melanocephala, Sw. Black headed Grosbeak.
- * *Pyrranga rubra*, (L.) Vieill. Scarlet Tanager.
Dolichonyx oryzivorus Sw. Bob Link.
Molothrus pecoris, Sw. Cow Bird.
- Agelaius phoeniceus*, Vieill. Red wing Blackbird.
 * *xanthocephalus* Bp. Sw. Yellow headed Blackbird.
- Icterus baltimore* Daud. Hanging Bird.
Scolecophagus mexicanus, Sw. Brewer's Blackbird.
- * *Sturnella ludoviciana*, Bp. Meadow Lark.
neglecta, Aud. Western Lark.
- Corvus corax*, Hagl. Raven.
americanus, Aud. Crow.
- Pica hudsonica*, Sab. Magpie.
Lanius ludovicianus, L. Loggerhead Shrike.
- Vireo olivaceus* L. Red eyed Wren.
Icteria viridis Bp. Chat.
- Bombicilla carolinensis*, Br. Cedar Bird.
 * *Trochilus colubris*, L. Humming Bird.
- Picus harrisi*, Aud. Harris' Woodpecker.
erythrocephalus, L. Red head Woodpecker.
- Colaptes auratus*, L. Flicker.
Rubricatus Licht. Red shafted Flicker.
Ayresii, Aud. Ayre's red shafted Flicker.
- Erythrophys erythrophthalmus*, Wils. Black billed Cuckoo.
- * *Conurus carolinensis*, Kuhl. Parraquet; above Fort Leavenworth.
- Ectopistes migratorius*, Sw. Wild Pigeon.
Carolinensis Sw. Dove.
- * *Meleagris gallopavo*, L. Wild Turkey, above Floyd's bluff.
- Tetrao urophasianus*, Bp. Cock of the Plains.
 * *cupido*, L. Prairie Hen.
phasianellus, L. Sharp tailed Prairie Hen.
- Ortyx virginiana*, Steph. Bob White.
- Fulica americana*, Om. Coot.
- Charadrius vociferus*, (L.) Killdeer.
virginianus, Borch. Bull head Plover.
- Apctitis bartramius*. Field Plover.
macularius, (L) Bp. Spotted Sandpiper.
- Totanus flavipes*, Vieill. Yellow Shanks.
- * *Rusticola minor* Woodcock.
- * *Recurvirostra americana*, (Om.) Avoset.
- Numerius longirostris*, Wils. Curlew.
- Ardea herodias*, (L) Blue Heron.
- Anser canadensis*, (L.) Canada Goose.
 * *hutchinsii*, Rich. Hutchin's Canada Goose.
 * *erythropus*, (L.) Bp. White fronted Canada Goose.
 * *hyperboreus*, (Pall.) Snow Goose.
- Cygnus buccinator*, Rich. Trumpeter Swan.
- Anas boschas*, (L.) Mallard Duck.
strepera, (L.) Gadwall Duck.
 * *acuta*, (L.) Sprig tail Duck.
- Anas sponsa*, (L.) Summer Duck.
- * *Anas obscura*, (Om.) Black Duck.
 * *clypeata*, (L.) Shoveler.
- * *Grus americanus*, (L.) Whooping Crane.
- Larus atricilla*, (L.) Black head Gull.
- Sterna fuscipes*, (L.) Black Tern.—118 species.

MAMMALIA.

- Bos americanus*. Buffalo.
Cervus canadensis, Say. Elk.
 macrotis, Say. Black tail Deer.
 virginianus, (L) Common Deer.
Antelope americana, Ord. Antelope.
Ovis montana, Desm. Bighorn.
Ursus ferox. Grizzly Bear.
 * *americanus*. Brown Bear.
Meles labradoria, Sab. Badger.
Gulo luscus, Sab. Wolverine.
Lupus occidentalis, Rich. White Wolf.
 latrans, Say. Prairie Wolf.
Vulpus velox, Say. Swift Fox.
Mephitis chinga? Skunk.
Mustela canadensis. Fisher.
Lynx canadensis. Canada Lynx.
Castor americanus, Rich. Beaver.
Lepus townsendii, Bach. Townsend's Hare.
 artemisia, Bach. Wormwood Hare.
 * *syloaticus*? Bach. Common Rabbit.
 * *Spermophilus ludovicianus*, Say. Prairie Dog.
 \ * *tridecemlineatus*, Mitch. Prairie Squirrel.
 * *Sciurus cinereus*, (L) Cat Squirrel.
 * *niger*. Black Squirrel.
 * *macrourus*, Say. Great tailed Squirrel.
 * *Tamia quadrivittatus*, Say. Four lined Ground Squirrel.
Neotoma floridana. Wood Rat.
 * *Mus musculus*, (L) House Mouse.
Hesperomys leucopus? Raf. Deer Mouse.
Pseudostoma borealis, Rich. Gopher.
Hystrix dorsata. Porcupine.

The following new Species are indicated as occurring in this region, by Maximilian Prince de Wied, (Voyage dans l'Amerique du Nord. Paris, 1843. 3 vols. 8 vo.)

- Vespertilio ursinus*. Fort Union.
Hypodæus leucogaster. Mandan Village.
Perognatus fuscus. Fort Union.

AN EXPLANATION OF THE TABULAR VIEW OF THE INDIAN TRIBES OF THE UPPER MISSOURI.

BY THADDEUS A CULBERTSON, JULY 1850.

Explanation of the Tabular view of the Sioux Nation of the U. Missouri.

These tables are designed to show the numbers, principal tribes, smaller divisions and country of that part of the Sioux Nation living on the Upper Missouri. The information has been gathered from Mr. Charles Gilpin, of Fort Pierre, from several Indian chiefs, and has been submitted to the inspection of Mr. Henry Picotte and Mr. Alexander Culbertson, partners of the American Fur company, and for many years familiar with the nation referred to, as well as with those higher up the river. The Sioux nation occupies the immense tract of country extending in a south west direction from the Upper Mississippi to the Platte river, and bounded on the West by the Black Hills.

This table does not refer to that part of the nation living on the Mississippi. Three thousand lodges may be relied on as very nearly the correct number of those living on the Missouri, according to the testimony of the best authority, and thirty thousand as nearly the correct number of souls; the average souls per lodge has been put at ten, on the authority of Mr. Picotte, who has had every opportunity of making a correct estimate. He thinks that eight souls per lodge might not be too low, but he prefers to put the estimate at ten.

The first division of the nation is into three large tribes; — The Yanktons, the Yanktonnans and the Titons or Tetonwans. These speak the same language and always maintain friendly relations, but they have few interests in common; so far as I could learn, they hold towards each other no relation at all analogous to a federal union.

Each of these tribes is again divided into a great number of small bands, bound together by ties of kindred and affinity; each of these consists of a single family connection, lives by itself, and regulates its own private concerns. They have no chief possessing the authority which is generally associated with that title, but the men of authority amongst them are those who have gained it by an extensive family connection, by their great wealth, or by their success in war and general character for wisdom. There are a number of such men in each band.

These bands all take names that their own taste may select, or that some circumstance may give them. Those given in the table are by no means the whole number, but they are the principal ones, and are sufficient to illustrate the nature of these divisions. The Titons have an intermediate division between these small bands and the larger ones, consisting of seven bands, as marked in the table, the Brules, Blackfeet, &c. There are other associations amongst all the tribes, which I have not noticed in the table; these are somewhat analogous to the association of Odd Fellows and other secret societies amongst us, having for their object mutual protection and defence. The country of each tribe has necessarily been assigned by the most general limits. The Sioux nation has no fixed place of residence; the people use skin lodges for their habitations and are constantly on the move, and their only wealth consists of horses and the buffalo robes that they may procure. The rivers referred to in the table are the ones on some part of whose basins the tribe generally passes the winter. The limits between hostile nations may be tolerably well defined, as they are exceedingly careful not to meet their enemies unless traveling in large bands or in war parties.

The list of names that closes the table is intended principally to illustrate their method of naming; these are the names of a few of the principal men in each band, and the same method of naming is employed in everything. It will be seen that all the names are significant and most probably given to the persons from some circumstance happening to them, or great feat performed by them. The last column is the Indian name spelled as pronounced, as nearly as the ear could catch the sound.

Explanation of the Tabular view of several Indian nations of the Upper Missouri.

THE CHEYENNE NATION.

Most of the previous remarks apply also to the nations referred to in these tables. I shall here merely note peculiarities. This nation once lived on the Missouri, but has been driven back gradually by the Sioux people, until their principal range is west of the Black Hills. They speak a distinct language, which is so difficult to acquire, that but two or three whites are able to speak it. In 1849 they suffered severely from the cholera; about two hundred lodges being carried off by that disease. The following are the names of two of their principal men. Yellow Wolf—Sha-ga-u-an-to-g'hi. Mad Bull—To-tun-cha-ga-nun-tchi-ah.

THE ARICCARIE NATION.

This people differs from most other tribes in using dirt lodges and living in a permanent village. Their village is located at Fort Clarke, on the west bank of the Missouri, little above forty-seven degrees of North latitude. They inhabit this during the whole of the year, except a part of the winter months. They raise large quantities of corn, which differs very much from that raised in our fields, but none of our vegetables have reached them yet. The Rees were once a large nation, but within the last thirty years, pestilence, disease and war have reduced their numbers very greatly. This has almost broken up these large family connections that constitute the bands amongst the Sioux and the bands of Rees in the table, are those smaller associations mentioned in page 4.

THE MANDAN NATION.

This is the remnant of quite a large band that was almost exterminated by the small pox in 1833 or 1839. Their depopulated village was taken possession of by the Rees who now hold it and they themselves became partly incorporated with the Rees and other tribes, excepting a few who have a small village, five miles above that of the Rees. They are again increasing very slowly, and are said to be a brave people. They speak a distinct language.

Mr. Joseph Desautel, of Fort Clarke, is my authority for the numbers of the Ree nation.

THE GROS VENTRE NATION.

The Indian name for this nation is Minnetaree—people of the Willows. Like the Rees they live in a permanent village and cultivate the land; their village is at Fort Berthold, on the east side of the Missouri, seventy-five miles above the Ree village. They have lately enclosed it with good pickets, to protect themselves from their enemies, and are said to be anxious to adopt the arts of civilized life. The bands here, as with the Rees, are not formed by family con-

nections, but are voluntary associations and consist of persons of the same age. The Black Tail Deer band consists of very old men, and the other bands of ages in a descending series to the Foxes, which is a band of very young men.

Mr. Kipp, of Fort Bethold, is my authority here.

THE ASSINIBOINE NATION.

This is a large wandering tribe, ranging in a very extensive country north of the Missouri, extending far into British America, and lying east of the Blackfoot country. The larger part trades with the British company, and only about six hundred lodges trade with the Americans. Their name signifies the Stone People. Their language is kindred to the Sioux.

*THE CROW NATION.

This is a large nation inhabiting the country drained by the Yellowstone. It is divided into two large villages or bands, and these are again divided into bands formed of family connections; the connections are here counted on the mothers' side instead of the fathers'. The Crow people are very brave and are great warriors. They and the Gros Ventre nation speak the same language.

Mr. Meldrum, who has lived for twenty-five years amongst the Crows, is my authority here. He makes twelve souls the average number to a lodge amongst this people, as it is well known that they have more to a lodge than any other nation. It will be noticed that the average varies in each nation.

THE BLACKFOOT NATION.

This is also a large and very warlike nation, living north of the Missouri, and partly in the British dominions. Its minor divisions are not well ascertained, because only a part trade with the Americans, and they generally come to the Fort in very large numbers. The division into North and South Blackfeet is probably a division made by the traders for their own convenience. The first three divisions speak the same language, but the Gros Ventre du Prairie, although fully incorporated with the Blackfoot nation, speak a different tongue, said to be the same as that of the Arapahoes on the Arkansas.

Mr. Malcom Clark, of Fort Benton, is my authority.

A.
A TABULAR VIEW OF THE SIOUX NATION ON THE UPPER MISSOURI, A. D. 1850.

Nation.	Tribes.	Sub Tribes.	Principal Bands.	Country.	Principal Men.	Their Indian Names.
Sioux, (on Missouri.) (about) 3000 lodges, (about) 30,000 souls.	Yankton, 300 lodges.	Brules 500 lodges.	Band of the lights. Band that eats no geese. Band that don't cook. Band that eats no buffalo. The cut heads— <i>Tetes Coupes</i> . The Pole people. The few that lived. Those that shoot in the pines. The Pheasants. The Orphans. The broiled meat people. The big legged horses. Those that boil their dishes. The bad arms. Those born in the middle. Those that eat crows. The Cuts— <i>des Coupes</i> . The black footed ones. The bad looking ones. Those that camp next to the last. The crow feather band. The Devil's medicine man band. Half breech cloth people. Fresh meat necklace people. The sleepy kettle band. The sore backs The bad bows. Those that carry.	Basin of the river A Jacques.	The one that strikes the Bee The Smutty Bear. The Red Cloud. The one that tells the Truth The Bone Necklace. The two Bears The White Spider.	Pa-ta-ni-a-pa-pi. Ma-to-sub-ich-i-ay. Ma-pla-lu-tah. E-a-tcha-ca-pi. Ho-hoon-nunpi. Ma-to-nob-pah. Tel-to-m-skah.
	Yanktonnan, 350 lodges.			West of the Yank- ton's and north of the Missouri.		
				L'Eau qui court ri- ver, Plate north and seldom north of White river.	The Little Thunder. The Eagle's Body. The Iron Shell.	Wa-chi-unchi-ki-buh Tchu-i-wah-hel-i. Ma-sa-pan-ches ca.
	Titon 2250 lodges	Blackfeet, * 450 lodges.			The Red Bull. The Bad Bull. The White Thunder.	Ta-tun-tcha-in-tah. Ta-tun-tcha-se-tcha. Wu-che-un-ska.
		Onch-pa-pah 320 lodges.		The Shayan, Mo- rean, Grand and Cannonball rivers. These bands range together.	The Little Bear. The White Feet. The Bear's Rib. The Four Horns. The Red Horn.	Ma-to-tchi-cah. O-jah-ska-ska. Ma-ta-tchut-itsa. Hay-to-kah. He-la-tah.

* Not the Blackfoot Nation.

VIEW OF THE SIOUX NATION : — CONTINUED.

Nation.	Tribes	Sub Tribes.	Principal Bands.	Country.	Principal Men.	Their Indian Names.
Sioux. [See Above.]	Teton. [See Above.]	Mini-congsha 270 lodges	The river that flies. Those that eat no dogs. The shell earring band. Leja-ga-dut-eah	Head and forks of the Shuyen river and Black Hills together	The Little Brave. The Red Fish. The Feather Earrings.	Hi-to-kah. Oh-glah-in-tah We-akah-oh-wee.
		Sans Arc 250 lodges	The Sans Arcs. The red water band Those that eat the ham.			
		Ogallah 400 lodges	The Ogallah band. The red water band. The old skin necklace band. The night cloud band. The red lodge band. The short hair band,	North and south forks of Platte riv- er and West of Black Hills	The Crow Feather. The Lazy Bear. The Medicine Man The Whirlwind. The Red Water. The Standing Bull. The Yellow Eagle.	Con-gi-wi-a-kah. Ma-to-un-dhique pa-ni Wi-tscha-sa-fia-kah Wa mine-ma du-sah. Mi-na-shah. Wa-ma-ba-gi- To-tum-cha-na-sha.
		Kettle band, 60 lodges	No Divisions.			
					The Four Bears.	Ma to-pah.

B.
TABULAR VIEW OF SEVERAL INDIAN NATIONS, ON THE UPPER MISSOURI, A. D. 1850.

<i>Nations.</i>	<i>Bands.</i>	<i>Country.</i>	<i>Language.</i>
Cheyenne, 300 Lodges. 3,000 Souls.	The Dog Soldier band The Yellow Wolf band The Half Breed band Band of the Bulls Blackmouths Foolish Dogs Young Dogs Foxes Crows	Principally west of the Black Hills. Originally on the Missouri. Permanent village at Fort Clark, about forty seven degrees north latitude :— they winter elsewhere.	Language distinct. Language kindred to the Pawnee.
Aricaree, 200 Lodges 1,500 Souls		West bank of the Missouri.	Language distinct.
Mandan, 30 Lodges 150 souls	The Pheasants	Permanent village on the Missouri, five miles above the Ree village.	Language kindred to the Crow.
Gros Ventre, 85 lodges 700 souls	Band of the Foxes Foolish Dogs Dogs Old Dogs Bulls Black Tail Deers	Permanent village on the east bank of the Missouri, seventy five miles above Fort Clark, at Fort Berthold.	Language kindred to the Sioux or Dahcotah.
Assiniboine, 1,500 lodges (in all) 600 trade on the Missouri.	The Canoe band The Left Hand band [Could not learn the names of other bands]	North of the Missouri, and east of the Blackfoot country .	

B. — TABULAR VIEW : — CONTINUED.

<i>Nations.</i>	<i>Bands.</i>	<i>Country.</i>	<i>Language</i>	
Crow, 400 lodges, 4,800 souls (about)	— Crow People	The basin of the Yel- low Stone river	Language Distinct.	
	— Mine-set-peri, (Sap-suckers,) }			The above two bands are divided into 12 small ones, as follows :
	— Pole Cat band }			
	— Bad Leggins			
	— Those that lodge close together			
	— The treacherous lodges			
	— Red Mouths			
	— Bad Coup : (originally Black Feet Indians)			
	— The Rich Prairie Dog			
	— The lodges charged upon			
	— Ship-tet-sa			
	— Kick in the Belly			
	— The lodges without Horses			
— Root Diggers : (originally a band of Snake Indians)				
Black Foot, 1,200 lodges, 9,600 souls (about)		Trade with Hudson's bay Co American Fur Co Language distinct Country north of the Missouri river and west of Assiniboine country : Language distinct Kindred to the Arapahoes	Remarks.	
	<i>Tribes.</i>			<i>Bands.</i>
	The Blackfoot			North Blackfoot
				South Blackfoot
				The Fish Eaters
	The Blood Indians			The Depuvis band
				The Robes with Hair on the outside
				North Piedgans
				The Little Robes
	The Piedgans, (pronounced Pagans)			The People that don't laugh
				The Bloody Piedgans
				The Cow Dung Band
	Gros Ventre du Prairie			<i>Not ascertained</i>

SUMMARY.

Sioux,-----	30,000
Cheyene,-----	3,000
Ariccaree,-----	1,500
Mandan,-----	150
Gros Ventres,-----	700
Assiniboine,-----	4,800
Crow,-----	4,800
Blackfoot,-----	9,600
<hr/>	
<i>Probable number of Indians on the Upper Missouri,</i>	
<i>and its tributaries-----</i>	<i>54,550</i>

APPENDIX TO LIBRARIAN'S REPORT.

Copy-right Publications deposited prior to 1850.

LIST of Books, Maps, Charts, Musical Compositions, &c. delivered to the Librarian of the Smithsonian Institution, from August 10, 1846, to December 31, 1849; in compliance with the following requirement of the Act of Congress, approved August 10, 1846, establishing the Smithsonian Institution.

“SECTION 10. *And be it further enacted*, That the author or proprietor of any Book, Map, Chart, Musical Composition, Print, Cut or Engraving, for which a copy right shall be secured under the existing acts of Congress, or those which shall hereafter be enacted respecting copy rights, shall, within three months from the publication of said Book, Map, Chart, Musical Composition, Print, Cut, or Engraving, deliver, or cause to be delivered, one copy of the same to the Librarian of the Smithsonian Institution, and one copy to the Librarian of Congress Library, for the use of the said Libraries.”

PART I. — BOOKS.

“ II. — MUSICAL COMPOSITIONS.

“ III. — MAPS, PRINTS, &c. &c.

PART I. — BOOKS.

ABBOTT (Jacob,) History of Alexander the Great, with engravings: 12mo 278p — New York, published by Harper & Brothers, 1848: deposited by Harper & Brothers.

History of Hannibal the Carthagenian, with engravings: 12mo 295p — New York, published by Harper & Brothers, 1849: deposited by Harper & Brothers.

History of Julius Cæsar, with engravings: 12mo 278p — New York, published by Harper & Brothers, 1849: deposited by Harper & Brothers.

History of King Alfred of England, with engravings: 12mo 270p — New York, published by Harper & Brothers, 1849: deposited by Harper & Brothers.

History of Mary Queen of Scots, with engravings: 12mo 286p — New York, published by Harper & Brothers, 1848: deposited by Harper & Brothers.

ABBOTT (Jacob) History of Queen Elizabeth, with engravings: 12mo 281p; New York, published by Harper & Brothers, 1848: deposited by Harper & Brothers.

History of King Charles the First, of England, with engravings: 12mo 285p — New York, published by Harper & Brothers, 1848: deposited by Harper & Brothers.

History of Charles the Second of England, with engravings: 12mo 304p — New York, published by Harper & Brothers, 1849: deposited by Harper & Brothers.

A Summer in Scotland, with engravings: 8vo 331p — New York, published by Harper & Brothers, 1848: deposited by Harper & Brothers.

ABBOTT (John S. C.) Kings and Queens; or Life in the Palace; consisting of historical sketches of Josephine, Maria Louisa, Louis Philippe, Ferdinand of Austria, Nicholas, Isabella II., Leopold and Victoria: 12mo 312p — New York, published by Harper & Brothers, 1848: deposited by Harper & Brothers.

History of Maria Antoinette, with engravings: 12mo 322p — New York, published by Harper & Brothers, 1849: deposited by Harper & Brothers.

ADAMS (Daniel, M. D.) Book Keeping; containing a lucid explanation of the common method of book keeping by single entry; a new, concise and common sense method of book keeping, for farmers, mechanics, retailers and professional men, &c. &c., designed for schools and academies: 8vo large, 141p — Keene, published by J. W. Prentiss & Co., 1849: deposited by J. Homer French.

Primary Arithmetic; or Mental Operations in Numbers; being an introduction to the revised edition of Adams' new arithmetic, designed for schools and academies: 12mo 180p — Keene, published by J. W. Prentiss & Co. 1848: deposited by J. Homer French.

Key to Adams's New Arithmetic, revised edition, for the use of teachers: 12mo 88p — Keene, published by J. W. Prentiss & Co., 1848: deposited by Daniel Adams.

Adams's New Arithmetic, in which the principles of operating by numbers are analytically explained, and synthetically applied, illustrated by copious examples; revised edition, designed for the use of schools and academies: 12mo 306p — Keene, published by J. W. Prentiss & Co. 1848: deposited by Daniel Adams.

ADAMS (Mrs.) Letters of Mrs. Adams, the wife of John Adams, with an introductory memoir, by her grandson Charles Francis Adams; fourth edition, revised and enlarged, with an appendix, containing the letters addressed by John Adams, to his son John Quincy Adams, on the study of the bible: 12mo 472p — Boston, published by Wilkins, Carter & Co., 1848: deposited by Charles Francis Adams.

ADAMS (Rev. W., M. A) The King's Messengers, an allegorical tale; from the London edition, with engravings, executed by W.

Howland, from original designs by Weir : 12mo 141p — New York, published by the General Protestant Episcopal Sabbath School Union, 1848 : deposited by J. W. Mitchell.

ADAMS (Rev. W., M. A.) *The Old Man's Home*; with engravings, from original designs by Weir : 12mo 108p — New York, published by the General Protestant Episcopal Sabbath School Union, 1848 : deposited by J. W. Mitchell.

AGASSIZ (Louis) and GOULD (Augustus A.) *Principles of Zoölogy* : touching the structure, development, distribution and natural arrangement of the races of animals, living and extinct, with numerous illustrations, for the use of schools and colleges ; Part I, *Comparative Physiology* : 12mo 216p — Boston, published by Gould, Kendall & Lincoln, 1848 : deposited by Gould, Kendall & Lincoln.

AGNES MORRIS, or *the Herione of domestic life* : 12mo 143p — New York, published by Harper & Brothers, 1849 : deposited by Harper & Brothers.

ALAMANCE ; or *the great and final experiment* : 8vo pamphlet 15p — New York, published by Harper & Brothers : deposited by Harper & Brothers.

ALDEN (Joseph, D. D.) *The Dying Robin and other tales* : 12mo 212p — New York, published by Harper & Brothers : deposited by Harper & Brothers.

The Lawyer's Daughter, illustrated by H. W. Hewet : 12mo 186p — New York, published by Harper & Brothers, 1848 ; deposited by Harper & Brothers.

Alice Gordon, or the uses of Orphanage ; with ten illustrations : 16mo 198p — New York, published by Harper & Brothers 1847 ; deposited by Harper & Brothers.

The Young Schoolmistress : 16mo 197p — N. Y., published by Harper & Brothers : deposited by Harper & Brothers.

ALFIERI (Vittorio,) *The Tragic Poet*. The autobiography of Alfieri, born at Asti, 1749, died at Florence, 1803, translated, with an original essay on the genius and times of Alfieri, by C. Edwards Lester : 12mo 269p — New York, published by Paine & Burgess : deposited by Paine & Burgess.

ALSOP (Samuel,) *First lessons in Algebra*, in which the elements of the science are familiarly explained : 12mo 116p — Philadelphia, published by E. C. & J. Biddle, 1849 : deposited by Samuel Alsop.

An elementary treatise on Algebra, in which the principles of the science are familiarly explained, and illustrated by numerous examples, designed for the use of schools : 12mo 288p — Philadelphia, published by E. C. & J. Biddle, 1846 : deposited by E. C. & J. Biddle.

AMERICAN QUARTERLY REGISTER [The] and Magazine, conducted by James Stryker : May, 1848, Vol 1, No 1 ; September, 1848, Vol 1, No 2 ; March, 1849, Vol 2, No 1 ; June, 1849, Vol 2, No 2 ; September, 1849, Vol 3, No 1 ; Vol 1, 8vo 608p : Vol 2, 8vo

607p — Philadelphia, Vol 1, published by E. C. & J. Biddle, Vols 2, and 3, published by the Proprietor, 1849: deposited by James Stryker.

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The Phonographic Word-book, No 1, containing all the monosyllables of the English language, inductively arranged and classified according to the words in which they should be written in Phonography, together with rules and explanations; designed immediately to succeed the Phonographic Class Book and the Phonographic Reader: 16mo 52p — N. York, published by Andrews & Boyle, 1849; deposited by Andrews & Boyle.

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The complete Phonographic Class Book, containing a strictly inductive exposition of Pitman's Phonography, adapted as a system of Phonetic short hand to the English language, especially intended as a school book and to afford the fullest instruction to those who have not the assistance of the living teacher; eleventh edition: 12mo 131p — New York, published by Andrews & Boyle, 1848; deposited by Andrews & Boyle.

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- ROWTON (Frederic) The female poets of Great Britain, chronologically arranged, with copious selections and critical remarks; with additions, by an American editor, and elegantly engraved illustrations by celebrated artists: 8vo large, 533p — Philadelphia, published by Carey & Hart, 1849; deposited by Carey & Hart.
- ROY (William L.) A new and original exposition of the book of Revelations, as well as the prophecies of Daniel, Ezekiel, Joel, &c.: with useful and practical observations; together with numerous citations from the Jewish Talmuds and Targums, and also from Ancient History and authors, illustrating more fully the symbolical language of this mysterious book: 8vo 324p — New York, published by D. Fanshaw, 1848; deposited by William L. Roy.
- ROYLE (J. Forbes, M. D., F. R. S.) Materia Medica and Therapeutics; including the preparations of the pharmacopœias of London, Edinburgh, Dublin and of the United States; with many new medicines. Edited by Joseph Carson, M. D., with ninety-eight illustrations: 8vo large, 689p — Philadelphia, published by Lea & Blanchard, 1847; deposited by Lea & Blanchard.
- RUBY (The) A Token of Friendship for 1849, with superb steel engravings, from designs by celebrated artists: 8vo 304p — Philadelphia, published by Carey & Hart, 1849; deposited by Carey & Hart.
- RUSSELL (Francis T.) The Juvenile Speaker; comprising elementary rules and exercises in declamation, with a selection of pieces for practice: 12mo 263p — New York, published by Harper & Brothers, 1847; deposited by Harper & Brothers.
- RUSSELL (William,) Harper's New York class book; comprising outlines of the geography and history of New York; biographical notices of eminent individuals, sketches of scenery and natural history; accounts of public institutions, &c., &c. Arranged as a reading book for schools: 12mo 669p — New York, published by Harper & Brothers, 1847; deposited by Harper & Brothers.
- Introduction to the primary Reader of Russell's elementary series; designed to accompany the Spelling book: 12mo 112p — Boston, published by Charles Tappan, 1847; deposited by William Russell.
- SABINE (Lorenzo) The American Loyalists; or, biographical sketches of adherents to the British crown in the war of the revolution,

alphabetically arranged ; with a preliminary historical essay : 8vo 733p — Boston, published by Little & Brown, 1847 ; deposited by Little & Brown.

SALSBURY (J. H.) Prize Essay. History and chemical investigation of maize or Indian corn : 8vo 201p — Albany, published by C. Van Benthuysen, 1849 ; deposited by J. H. Salsbury.

SALKELD (Joseph) Classical Antiquities, or a compendium of Roman and Grecian antiquities ; with a sketch of ancient mythology : 16mo 316p — New York, published by Harper & Brothers, 1847 ; deposited by Harper & Brothers.

A First book in Spanish ; or, a practical introduction to the study of the Spanish language, &c. ; Reading lessons and a vocabulary, &c. ; 12mo 396p — New York, published by Harper & Brothers, 1848 ; deposited by Harper & Brothers.

SANDFORD (Hon. Lewis H.) Report of cases argued and determined in the court of chancery of the state of New York, before the Hon. Lewis H. Sandford, vice-chancellor of the first circuit. [the second volume while assistant vice-chancellor] : 8vo large, vol. 2, 716p ; vol. 3, 715p — New York, published by Banks, Gould & Co. ; deposited by Banks, Gould & Co.

Reports of cases argued and determined in the Superior court of the city of New York : 8vo large, 796p — New York, published by Banks, Gould & Co., 1849 ; deposited by Banks, Gould & Co.

SANDS (George W.) Mazelli, and other poems ; 12mo 156p — Philadelphia, published by Lindsay & Blakiston, 1849 ; deposited by George W. Sands.

SANGER (George P.) A table of the cases contained in the three volumes of the United States Digest, and in the two volumes of the supplement ; alphabetically arranged, with a reference for each case to the volume and page of the report whence the case is taken, and to the volume and page of the Digest where it is found : 8vo 787p — Boston, published by Little & Brown, 1849 ; deposited by Little & Brown.

SARGENT (F. W., M. D.,) On bandaging and other operations of minor Surgery : 8vo 379p — Philadelphia, published by Lea & Blanchard, 1848 : deposited by Lea & Blanchard.

SARTAIN (J.) The American gallery of Art, from the works of the best artists, with poetical and prose illustrations, by distinguished American authors : 4to 110p — Philadelphia, published by Lindsay & Blakiston, 1848 ; deposited by Lindsay & Blakiston.

SCENES at Washington. A story of the last generation ; by a citizen of Baltimore : 12mo 197p — New York, published by Harper & Brothers, 1848 ; deposited by Harper & Brothers.

SCHMIDT (Peter Von) The young Assayer's and Miner's assistant, compiled from the best authors on chemistry and geology ; 16mo 58p — New York, published by G. W. Palmer, 1849 ; deposited by Peter Von Schmidt.

- SCHMUCKER (S. M., A. M.,) The errors of modern Infidelity illustrated and refuted: 12mo 480p — Philadelphia, published by Grigg, Elliot & Co., 1848; deposited by S. M. Schmucker.
- SCHWARTZ (Theodor) Handbuch für den Freimaurer, oder der Hieroglyphen Deuter. Enthaltend treue Erklärungen der Symbole des Lehrlings-Gesellen und Meister-Grades: 12mo 141p — Louisville, printed by Scheeffer und Doen, 1849; deposited by Theodor Schwartz.
- SCRIBNER (B. F.) Camp life of a Volunteer. A campaign in Mexico, or a glimpse at life in camp, by "One who has seen the Elephant:" 8vo 75p — Philadelphia, published by Grigg, Elliot & Co., 1847; deposited by Grigg, Elliot & Co.
- SEAMAN (Ezra C.) Essays on the progress of Nations, in productive industry, civilization, population and wealth; illustrated by statistics of mining, agriculture, manufactures, commerce, banking revenues, internal improvements, emigration, mortality and population: 8vo large, 455p — Detroit, published by M. Geiger & Co., 1846; deposited by E. C. Seaman.
- Supplement to essays on the progress of Nations, No. 2: 8vo 87p — New York, 1848.
- SERGEANT (Thomas) and RAWLE (William, Jr.,) Reports of cases adjudged in the Supreme court of Pennsylvania. Ssecond edition, revised and corrected: 8vo large, [volumes 13, 14, 15, 16 and 17 only received]: vol. 13, 478p; vol. 14, 476p; vol. 15, 498p; vol. 16, 476p; vol. 17, 474p — Philadelphia, published by Thomas Davis; deposited by Thomas Davis.
- SHAKSPEARE (William) A supplement to the plays of William Shakspeare: comprising seven dramas, which have been ascribed to his pen, but which are not included with his writings in modern editions, viz: the two Noble Kinsmen; the London Prodigal; Thomas Lord Cromwell; Sir John Oldcastle; the Puritan, or, the Widow of Watling; the Yorkshire tragedy of Locrine. Edited with notes, and an introduction by William Gilmore Simms, Esq. First American edition: 8vo large, 178p — New York, published by George T. Cooledge & Brother, 1848; deposited by George T. Cooledge & Brother.
- SHARSWOOD (George) The public and general statutes passed by the Congress of the United States of America, from 1837 to 1847, inclusive, whether expired, repealed or in force; arranged in chronological order, with marginal references; being a continuation of the laws published under the inspection of Joseph Story, one of the Justices of the Supreme court of the United States. Being volume 5: 8vo large, pages 2637 to 3280 — Philadelphia, published by T. & J. W. Johnson, 1848; deposited by T. & J. W. Johnson.
- SHATTUCK (W. B.) The Columbian drawing cards, Nos. 1, 2, and 3 — Cincinnati, published by Bradley & Anthony, 1848; deposited by W. B. Shattuck.

The Columbian drawing book; designed for schools and private instruction. In six numbers: No. 1, 4to 25p — Cincin-

nati, published by Bradley & Anthony, 1848; deposited by W. B. Shattuck.

Same No. 1, second and improved edition: same publishers, 1849; deposited by W. B. Shattuck.

Same No. 2, same publishers, 1849; deposited by W. B. Shattuck.

SHIPP (Barnard) Fame; and other poems: 12mo 212p — Philadelphia, published by E. H. Butler & Co., 1848; deposited by B. Shipp.

SHORTFIELD (Luke) The Western merchant. A narrative, containing useful instruction for the western man of business who makes his purchases in the east — also, information for the eastern men whose customers are in the west, &c.: 12mo 268p — Philadelphia, published by Grigg, Elliot & Co, 1849; deposited by Grigg, Elliot & Co.

Wild western scenes, a narrative of adventures in the western wilderness, &c., beautifully illustrated: 12mo 270p — Philadelphia, published by Grigg, Elliot & Co., 1849; deposited by Grigg, Elliot & Co.

SIDNEY (J. C.) Map of the circuit of ten miles around the city of Philadelphia, with the names of roads, villages, mills, property owners, taverns, &c. From original surveys, by J. C. Sidney, civil engineer; Delaware county by Dr. Ash — Philadelphia, published by Robert P. Smith, 1847.

SIGOURNEY (Mrs. L. H.) Myrtis, with other etchings and sketchings; 12mo 292p — New York, published by Harper & Brothers, 1846; deposited by Harper & Brothers.

Illustrated poems; with designs by Felix O. C. Darley; engraved by American artists: 8vo large, 408p — Philadelphia, published by Carey & Hart, 1849. deposited by Carey & Hart.

SILLIMAN (Benjamin, Jr., M. A.) First principles of chemistry, for the use of colleges and schools; with more than two hundred illustrations: 8vo 492p — Philadelphia, published by Loomis & Peck, 1847; deposited by Loomis & Peck.

SIMMS (W. Gilmore) The life of Captain John Smith, the founder of Virginia: 12mo 379p — New York, published by G. F. Cooledge & Brother, 1846; deposited by W. Gilmore Simms.

The life of the Chevalier Bayard: 12mo 401p — New York, published by Harper & Brothers, 1847; deposited by Harper & Brothers.

SMEDES (W. C.) A Digest of the cases decided and reported in the high court of errors and appeals, and the Superior court of chancery of the state of Mississippi, from 1818 to 1847: 8vo large, 441p — Boston, published by Little & Brown, 1847; deposited by Little & Brown.

SMEDES (W. C.) and MARSHALL (T. A.) Report of cases argued and determined in the high court of errors and appeals for the state of Mississippi, vol 12. Containing all the cases for January term,

1849; 8vo large, 496p — Boston, published by Little & Brown, 1849; deposited by W. C. Smedes and T. A. Marshall.

SMEDES (W. C.) and MARSHALL (T. A.) Reports of cases argued and determined in the high court of errors and appeals for the state of Mississippi; vols. 7, 8, 9, 10, 11, 12; vol. 7, containing cases for November and January terms 1846; vol. 8, containing cases for January term 1847, vol. 9, containing cases for January terms 1847, and 1848; vol. 10, containing cases for January term 1848; vol. 11, containing all the cases for November term 1848; and vol. 12, containing all the cases for January term 1849: 8vo large, vol. 7, 918p; vol. 8, 870p; vol. 9, 704p; vol. 10, 708p; vol. 11, 684p; vol. 12, 796p — Boston, published by Little & Brown, vols. 7 and 8, in 1847, vols. 9 and 10, in 1848 and vol. 11, in 1849: deposited by W. C. Smedes and T. A. Marshall.

SMITH (Augustus W., LL. D.,) An elementary treatise on Mechanics; embracing the theory of statics and dynamics and its application to solids and fluids; prepared for the under graduate course in the Wesleyan University: 8vo 307p — New York, published by Harper & Brothers, 1849; deposited by Harper & Brothers.

SMITH (Fitch E.) Commentaries on statute and constitutional Law and statutory and constitutional construction; containing an examination of adjudged cases on constitutional law, under the constitution of the United States, and the constitutions of the respective states, concerning legislative power; and also the consideration of the rules of law in the construction of statutes and constitutional provisions: 8vo large, 976p — Albany, published by Gould, Banks & Gould, 1848: deposited by Gould, Banks & Gould.

SMITH (Henry) The musical primer and juvenile Instructor; embracing the round note and numeral systems of notation. In two parts — part one, revised and improved: 16mo 36p — Chambersburg, published by the proprietor; deposited by the proprietor. Three copies.

SMITH (J. Calvin) The illustrated Hand book; a new guide for travelers through the United States of America; embellished with one hundred and twenty-five highly finished engravings; accompanied by a large and accurate map: 12mo 223p — New York, published by Sherman & Smith, 1846; deposited by Sherman & Smith.

SMITH (Hon. John Cotton, LL. D.,) The Correspondence and Miscellanies of Hon. John Cotton Smith, LL. D., with an eulogy pronounced before the Connecticut historical society at New Haven May 27, 1846; by Rev. William W. Andrews: 12mo 328p — New York, published by Harper & Brothers, 1847; deposited by Harper & Brothers.

SMITH (Oakes E.) The Salamander, found amongst the papers of the late Ernest Helfenstein, second edition: 12mo 149p — New York, published by George P. Putnam, 1849; deposited by George P. Putnam.

SMITH (Oliver, A. M.) Outlines of Nature ; 12mo 198p — New York, 1847 ; deposited by Oliver Smith.

SMITH (R. M.) The Child's first book in Geography ; illustrated by eighteen maps, and upwards of one hundred beautiful engravings : 18mo 160p — Philadelphia, published by Grigg, Elliot & Co., 1849 ; deposited by Grigg, Elliot & Co.

Modern Geography, for the use of schools, academies, &c., on a new plan ; illustrated with maps and numerous engravings : 4to 80p — Philadelphia, published by Grigg, Elliot & Co., 1848 ; deposited by Grigg, Elliot & Co.

SNETHEN (Nicholas,) Sermons of the late Nicholas Snethen, minister of the Gospel in the Methodist Protestant Church, written by himself in the 69th year of his age ; edited by Worthington Garrettson Snethen. First edition : 12mo 480p — Washington, published by Ulysses Ward, 1846 ; deposited by Ulysses Ward.

SNETHEN (W. G.) The Black Code of the District of Columbia : 8vo 61p — New York, 1848.

SNOW FLAKE : a Holiday Gift for 1849 : 12mo 329p — Philadelphia, published by E. H. Butler & Co., 1849 ; deposited by E. H. Butler & Co.

A Holiday Gift for 1850 : 12mo 330p — Philadelphia, published by E. H. Butler & Co., 1850 ; deposited by E. H. Butler & Co.

SOLLEY (Prof. E.) Syllabus of a complete course of lectures on Chemistry, including its application to the arts, agriculture and mining. Revised, with additions, by the author of "Chemical and Pharmaceutical Manipulations" &c. : 8vo 198p — London, published by Longman, Brown, Green & Longmans, and at Philadelphia, by Carey & Hart ; deposited by Carey & Hart.

SOUTHEY (Robert, Esq., LL. D.) The Life of John Wesley, and rise and progress of Methodism ; with notes by the late Samuel Taylor Coleridge, Esq., and remarks on the life and character of John Wesley, by the late Alexander Knox, Esq. Edited by Rev. Charles Cuthbert Southey, A. M. Second American edition, with notes &c. by Rev. Daniel Curry, A. M. 2 volumes : 12mo large, vol. 1, 476p ; vol. 2, 454p — New York, published, 1849 ; deposited by Harper & Brothers.

SOUTHWORTH (Emma D. E. Nevitt) Retribution ; or the vale of shadows. A tale of passion : 8vo 108p — New York, published by Harper & Brothers, 1849 ; deposited by Harper & Brothers.

SPARKS (Jared) The Library of American Biography, conducted by Jared Sparks. Second series. Volumes 11, 12, 13, 14, 15 ; volume 11 containing the life of Stephen Decatur, by Lieutenant Slidell Mackenzie ; volume 12 containing the lives of Edward Preble, by Lorenzo Sabine, and William Penn, by George E. Ellis : volume 13 containing the lives of Daniel Boone, John M. Peak and Benjamin Lincoln, by Francis Bowen ; volume 14 containing the life of John Ledyard, by Jared Sparks ; volume 15, containing the lives of William Richardson Davie, by Fordyce M. Hubbard, and Samuel Kirkland, by Samuel K. Lothrop :

16mo vol. 11, 443p; vol. 12, 408p; vol. 13, 434p; vol. 14, 419p; vol. 15, 461p — Boston, published by Little & Brown; deposited by Little & Brown.

SPENCER (George, A. M.) Latin Lessons, with exercises in parsing; introductory to Bullion's Latin Grammar and Latin Reader. Second edition, 12mo 196p — New York, published by Pratt, Woodford & Co., 1845; deposited by George Spencer.

SPENCER (Rev. J. A., A. M.) Greek Reading Book for the use of schools; containing the substance of the practical introduction to Greek construing, and a treatise on the Greek particles, by Thomas Kerchever Arnold, M. A., and also a copious selection from Greek authors, with English notes critical and explanatory, and a lexicon: 12mo 618p — New York, published by D. Appleton & Co., 1848; deposited by D. Appleton & Co.

The four Gospels and Acts of the Apostles, in Greek; with English notes, critical, philological and exegetical, maps, indices, &c.; together with the epistles and apocalypse. The whole forming the complete text of the New Testament, by the Rev. J. A. Spencer, A. M.: 12mo large, 611p — New York, published by Harper & Brothers, 1847; deposited by Harper & Brothers.

SPRING (Gardener, D. D.) The Bethel Flag; a series of short discourses to seamen: 12mo 309p — New York, published by Baker & Scribner, 1848; deposited by Baker & Scribner.

The Power of the Pulpit; or thoughts addressed to Christian ministers and those who hear them: 12mo 459p — New York, published by Baker & Scribner, 1848; deposited by Baker & Scribner.

STANTON (Benjamin F.) Sermons of the late Rev. Benjamin F. Stanton: 12mo 311p — New York, published by D. Fanshaw, 1848; deposited by Charlotte F. Stanton.

STANTON (Henry B.) Sketches of Reforms and Reformers of Great Britain and Ireland: 12mo 393p — New York, published by John Wiley, 1849; deposited by H. B. Stanton.

STEPHENS (Mrs. Ann S.) The Ladies National Magazine, volume 13: 8vo large, 215p — Philadelphia, published by Charles J. Peterson, 1848; deposited by Mrs. Ann S. Stephens.

STEVENS (Enos,) Rudiments of Astromy, &c.; with directions for using the diagram of the solar system so as to represent the relative portions of all the heavenly bodies every day: 16mo 36p — Boston, published by James French, 1849; deposited by Enos Stevens.

STEWART (W.) New York Pictorial, and Mother's Spelling and Reading Book; or child's first step to knowledge: 16mo 72p — Hagers-town, published by W. Stewart, 1849; deposited by W. Stewart.

STILLE (Alfred, M. D.) Elements of General Pathology; a practical treatise on the causes, forms, symptoms and results of disease: 8vo 483p — Philadelphia, published by Lindsay & Blakiston, 1848; deposited by Lindsay & Blakiston.

STORRS (Richard S., Jr.) *Congregationalism: its principles and influences: a discourse delivered before the general associations of New York, at their meeting in Madison, August 1848; by the Rev. Richard S. Storrs, Jr., published by request of the association: 8vo 72p* — New York. Published by Baker & Scribner, 1848; deposited by Baker & Scribner.

STORY (William W.) *A Treatise on the Law of sales of Personal Property, with illustrations from the foreign law: 8vo large, 488p* — Boston, published by Little & Brown; deposited by William W. Story.

A Treatise on the Law of Contracts not under Seal. Second edition, revised and greatly enlarged: 8vo large, 900p — Boston, published by Little & Brown, 1847; deposited by William W. Story.

Reports of Cases argued and determined in the Circuit court of the United States for the first Circuit. Volume 3: 8vo large, 849p — Boston, published by Little & Brown, 1847; deposited by William W. Story.

STREET (Alfred B.) *Frontenac; or the Atotarho of the Iroquois. A metrical romance: 12mo 324p* — New York, published by Baker & Scribner, 1849; deposited by Baker & Scribner.

STREET (Robert) *The Faith and Doctrines of the Church of the Eternal Son; intended as a church book for the church of the Eternal Son generally, &c. Divided into four parts. To which is added a number of select hymns, &c.: 12mo 408p* — Philadelphia, 1849; deposited by Robert Street.

STRICKLAND (W. P.) *History of the American Bible Society from its organization to the present time; with an introduction by Rev. N. L. Rice, D. D. Embellished with a likeness of Hon. Élias Boudinot, LL. D.: 8vo 466p* — New York, published by Harper & Brothers, 1849; deposited by Harper & Brothers.

SUMNER (Charles,) *Reports of Cases argued and determined in the Circuit court of the United States, for the first Circuit. Second edition. Volume 1: 8vo large, 612p* — Boston, published by Little & Brown, 1848; deposited by Little & Brown.

SUPPRESSED *Facts; being nobility unveiled: by a naturalized citizen of the United States: 8vo 38p* — New York, 1843.

SWAN (William D.) *The Instructive Reader; or a course of reading in natural history, science and literature, designed for the use of schools: 12mo 288p* — Philadelphia, published by Thomas, Cowperthwait & Co., 1848; deposited by William D. Swan.

The Grammar School Reader, consisting of selections in prose and poetry; with exercises in articulation: 12mo 248p — Philadelphia, published by Thomas, Cowperthwait & Co., 1848; deposited by William D. Swan.

TACITUS — *The Germania and Agricola of Tacitus, with English notes, critical and explanatory, from the best and latest authorities, the remarks of Bötticher on the style of Tacitus and a copious geographical index; by Charles Anthon, LL. D.: 8vo 252p* —

New York, published by Harper & Brothers, 1847 ; deposited by Harper & Brothers.

TALBOTT (John L.) *New Arithmetic. The Scholar's Guide to the Science of Numbers*; containing the Prussian canceling system, and other important abbreviations, adapted to the use of common schools, academies and private students : 8vo 212p — Cincinnati, published by J. A. & U. P. James, 1848 ; deposited by John L. Talbott.

TATE (Benjamin) *The American Form Book*; containing legally approved precedents for agreements, arbitrations, assignments, bonds, bills of exchange, promissory notes, conveyancing, letters of attorney, receipts, partnerships, releases, transfers, wills, deeds in trust and other matters of importance; with a complete index to the whole. A new and revised edition : 8vo 261p — Richmond, Va., published by Drinker & Morris, 1847 ; deposited by Drinker & Morris.

An Analytical digested index of the reported cases of the court of Appeals and general court of Virginia; from Washington to second Grattan inclusive ; with a repertorium doubly and systematically arranged. In two volumes : 8vo large, Vol. 1, 578p — Vol. 2, 602p — Richmond, Va., published by Drinker & Morris, 1847 ; deposited by Drinker & Morris.

TAYLOR (Gen. Zachary) *Taylor and his companions ; A biography of Gen. Zachary Taylor, with a full account of his military services. With twenty-seven portraits and engravings* : 16mo 128p — Philadelphia, published by E. H. Butler & Co., 1848 ; deposited by E. H. Butler & Co.

TAYLOR (W. C., LL. D.) *Pictorial History of France and Normandy, from the earliest period to the present time ; with a full account of the revolution and the several rebellions of 1848. By W. C. Taylor, LL. D. Illustrated with engravings, by the best artists* ; 8vo 512p — Philadelphia, published by Thomas, Cowperthwait & Co., 1848 ; deposited by Thomas, Cowperthwait & Co.

Pinnock's school series. *History of France and Normandy, from the earliest times to the revolution of 1848. With questions for examination, at the end of each section. Illustrated with numerous engravings. First American from the third English edition* : 8vo 444p — Philadelphia, published by Thomas, Cowperthwait & Co. ; deposited by Thomas, Cowperthwait and Co.

TAYLOR (Bayard) *Rhymes of Travel, ballads and poems. Second edition*, 12mo 152p — New York, published by George P. Putnam, 1849 ; deposited by George P. Putnam.

TAYLOR (Alfred S., F. R. S.) *On Poisons in relation to medical jurisprudence and medicine ; edited with notes and additions, by R. Eggesfeld Griffith, M. D. &c.* : 8vo 687p — Philadelphia, published by Lea & Blanchard, 1848 ; deposited by Lea & Blanchard.

THIERS (M. A.) *The history of the Consulate and Empire, under Napoleon, by M. A. Thiers; translated from the French by D. F. Campbell,*

with notes and additions by Henry W. Herbert, [part 6 only received]: 8vo 155p — Philadelphia, published by Carey & Hart, 1847; deposited by Carey & Hart.

THOMAS (Robert B.) No. 58. The (old) Farmers' Almanac, calculated on a new and improved plan for the year of our Lord 1850, &c.: 12mo 48p — Boston, published by Jenks, Palmer & Co., 1849; deposited by Jenks, Palmer & Co.

Maine edition, Nos. 57 and 58, for 1849 and 1850; Portland, published by Sanborn & Carter.

THOMPSON (D. P.) May Martin; or, the Money Diggers, a Green mountain tale: 12mo 156p — Burlington, published by Chauncey Goodrich, 1848; deposited by Chauncey Goodrich.

THOMSON (John Lewis) History of the second War between the United States and Great Britain, declared in 1812, and terminated in 1815; to which are added, sketches of the military operations of the United States to the present time, including the Black-Hawk war, the Seminole wars in Florida, and the war with Mexico: 8vo large, 656p — Philadelphia, published by Hogan & Thompson, 1848; deposited by Hogan & Thompson.

THORNTON (J. Quinn) Oregon and California in 1848; with an appendix, including recent and authentic information on the subject of the gold mines of California, and other valuable matter of interest to the emigrant, &c.; with illustrations and a map. Two volumes: 8vo Vol. 1, 393p; Vol. 2, 379p — New York, published by Harper & Brothers, 1849; deposited by Harper & Brothers.

THORPE, (T. B.) Our Army at Monterey; being a correct account of the proceedings and events which occurred to the "army of occupation," under the command of Major General Taylor, from the time of leaving Matamoros to the surrender of Monterey; with a description of the three days battle and the storming of Monterey, the ceremonies attending the surrender; together with the particulars of the capitulation; illustrated by a view of the city, and a map drawn by Lieutenant Benjamin, United States Army: 12mo 204p — Philadelphia, published by Carey & Hart, 1849; deposited by Carey & Hart.

Our Army on the Rio Grande; being a short account of the important events transpiring from the time of the removal of the "army of occupation" from Corpus Christi, to the surrender of Matamoros; with descriptions of the battles of Palo Alto and Resaca de la Palma, the bombardment of Fort Brown and the ceremonies of the surrender of Matamoros, with descriptions of the city, &c., &c.; illustrated with twenty-six engravings: 16mo 196p — Philadelphia, published by Carey & Hart, 1846; deposited by Carey & Hart.

THRALL (Walter,) A treatise upon the laws relating to the titles to lands which have been sold for the non-payment of taxes; by Walter Thrall: pamphlet, 8vo 120p — Columbus, Ohio, William B. Thrall, printer, 1847; deposited by Walter Thrall.

THOMAS THUMB (or Charles S. Stratton,) Life and Travels of Thomas Thumb, in the United States, England, France and Belgium;

with illustrations of him in his different costumes : 16mo 144p — Philadelphia, published by Lindsay & Blakiston, 1849 ; deposited by Lindsay & Blakiston.

TICKNOR (Almon) *The Columbian Calculator* ; being a practical and concise system of decimal Arithmetic. Third edition, revised and corrected : 12mo 264p — Pottsville, published by Benjamin Bannan, 1848 ; deposited by Almon Ticknor.

The Youth's Columbian Calculator ; stereotype edition : 12mo 96p — Pottsville, published by Benjamin Bannan, 1848 ; deposited by Almon Ticknor.

Columbian Spelling Book : 8vo 143p — Pottsville, published by Benjamin Bannan, 1849 ; deposited by Benjamin Bannan.

TRASTOM---*Caloric ; Origin, matter, and law of the Universe* ; by Trastom : 8vo 65p — New Orleans, printed by T. Rea, 1847 ; deposited by P. E. Trastom.

TRUMAN (D.) *Bible essay, or Six Reasons why Infidels should be Christians* ; with an introductory address : 16mo 122p — Mount Pleasant, Ohio, published by Enoch Harris, 1847 ; deposited by D. Truman.

TUCKER (T. T.) *A new treatise on the theory and practice of book-keeping by single and double entry* : 8vo 47p — Baltimore, published by Sherwood & Co., 1849 ; deposited by T. T. Tucker.

TUCKERMAN (Henry T.) *Characteristics of Literature, illustrated by the genius of distinguished men* : 12mo 269p — Philadelphia, published by Lindsay & Blakiston, 1849 ; deposited by Lindsay & Blakiston.

TURNBULL (Rev. Robert) *The genius of Italy ; being sketches of Italian life, literature and religion* : 12mo 333p — New York, published by George P. Putnam ; deposited by R. Turnbull.

TUTHILL (Mrs. L. C.) *The Nursery book, for young mothers* : 16mo 205p — New York, published by George P. Putnam, 1849 ; deposited by George P. Putnam.

TYLER (Samuel) *Robert Burns, as a poet, and as a man* : 12mo 209p — New York, published by Baker & Scribner, 1848 ; deposited by Baker & Scribner.

UPHAM (Thomas C.) *Life and Religious opinions and experience of Madame De la Mothe Guyon : together with some account of the personal history and religious opinions of Fenelon, Archbishop of Cambray*. In two volumes : 12mo Vol. 1, 431p ; Vol. 2, 380p — New York, published by Harper & Brothers, 1847 ; deposited by Thomas C. Upham.

URCULLU (D. José de) *Gramatica Inglesa, reducida à veinte y dos lecciones*. Edicion primesa Americana de la septima de Paris ; aumentada y revista por Fayette Robinson : 12mo 262p — Philadelphia, published by Thomas, Cowperthwait & Co., 1848 ; deposited by Thomas, Cowperthwait & Co.

A Grammar of the Spanish Language based upon the system of D. José de Urcullu ; also with reference to the publi-

cations of the Academy of Spain, the works of Fernandez and José, and the compendium of Don Augustin Monoz Alvarez, of the College of Seville; according to the seventh Paris edition of Urcullu's works; by Fayette Robinson: 8vo 286p — Philadelphia, published by Thomas, Cowperthwait & Co., 1848; deposited by Thomas, Cowperthwait & Co.

VALENTINE (Dr. W.) *A Budget of wit and humour; or, morsels of mirth for the melancholy; a certain cure for the blues, and all other serious complaints; comprising comic lectures on heads, faces, noses, mouths, animal magnetism, &c.* Illustrated by twelve portraits of Dr. Valentine in his most celebrated characters: 12mo 192p — Philadelphia, published by C. Marshall, 1849; deposited by C. Marshall.

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See : Otto (F.)

GUERNSEY (Wellington) See : Oh! would I were a Girl again.

HARRY AND LUCY. Coralie, a new Ethiopian song, written and composed by Harry and Lucy, arranged for Dumbolton's Ethiopian serenaders, by Frank Howard : 4to 5p --- New York, published by William Hall & Son, 1849; deposited by William Hall & Son, 14 December, 1849.

HARTGE (Levine G.) Guida Waltz, composed by Levine G. Hartge : 4to 2p --- Baltimore, published by George Willig, Jr., 1849; deposited by G. Willig, Jr., 4 April 1849.

Priscilla Polka, composed by Levine G. Hartge : 4to 2p --- Baltimore, published by G. Willig, Jr., 1849; deposited by G. Willig, Jr., 4 April 1849.

HASTINGS (Thomas) and BRADBURY (William B.) The New York Choralist: a new and copious collection of psalm and hymn tunes, adapted to all the various metres in general use, with a large variety of anthems and set pieces : 8vo long, 352p --- New York, published by Mark H. Newman & Co., 1847; deposited by Thomas Hastings and William B. Bradbury, 1847.

HENESS (Theophilus) Agamia Waltz, composed by Theophilus Heness : 4to 2p --- Baltimore, published by George Willig, Jr., 1849; deposited by George Willig, Jr., 4 April 1849.

HESS (Charles) The Jenny Gray Polka, composed by Charles Hess : 4to 2p --- New York, published by William Hall & Son, 1849; deposited by William Hall & Son, 14 December 1849.

See Jeannette and Jeannot, and LOVER (Samuel.)

HEWITT (J. H.) "My Heart's with Thee" : a ballad written and composed by J. H. Hewitt : 4to 11p --- Baltimore, published by George Willig, Jr., 1849; deposited by George Willig, Jr., 4 April 1849.

See : Oh! have I not been true to Thee.

HILL (U. C.) The Sister's Call, composed by U. C. Hill, arranged for the Spanish guitar, by L. Tripp : 4to 2p --- New York, published by William Hall & Son, 1849: deposited by William Hall & Son, 14 December 1849.

HOLLAND (Albert) Captain Shutt's Quick step, as performed by the Independent Blues' band — composed and arranged by Albert Holland: 4to 5p --- Baltimore, published by G. Willig, Jr., 1849: deposited by G. Willig, Jr., 4 April 1849.

President Taylor's grand Inauguration March, composed by Albert Holland: 4to 4p --- Baltimore, published by G. Willig, Jr., 1849; deposited by G. Willig, Jr., 4 April 1849.

HOWARD (Frank) The Female Slave's Lament; words by F. C. Germon, music by Frank Howard: 4to 7p --- New York, published by William Hall & Son, 1849: deposited by William Hall & Son, 14 December 1849.

See: Harry and Lucy.

I MAY NOT meet Thee, song, written by F. Cosby, Esq., arranged by W. C. Peters: 4to 5p --- Baltimore, published by George Willig, Jr., 1849; deposited by George Willig, Jr., 4 April 1849.

I (W. B.) See: Woodbury.

JEANNETTE and Jeannot, (Conscripts departure,) arranged for the Spanish Guitar, by Charles Hess: 4to 2p --- New York, published by William Hall & Son, 1849: deposited by William Hall & Son, 14 December 1849.

J (M. J.,) See: "See that little flower so gay."

JOHNSON (A. N.) The Choir Chorus book; a collection of choruses from the works of Handel, Haydn, Mozart, Cherubini, Mendelssohn, Spohr, Romberg, Neukomm, Rossini and other distinguished composers; compiled, adapted to English words, and arranged with particular reference to choir practice, and for the use of musical societies: 8vo long, 284p --- Boston, published by Wilkins, Carter & Co., and George P. Reed, 1848; deposited by A. N. Johnson 1848.

JOHNSON (J. C.) Juvenile Oratorios; a collection of songs designed for floral and other concerts, juvenile classes, schools, &c.; the festival of the Rose; the Indian Summer; the Children of Jerusalem; by James C. Johnson: 12mo long, 176p --- Boston, published by Wilkins, Carter & Co., 1849; deposited by J. C. Johnson, 4 May 1849.

JONES (L. J.) The Southern Minstrel; a collection of psalm and hymn tunes, odes and anthems, in three parts, selected from eminent authors, together with a number of new tunes never before published, suited to nearly every metre, and well adapted to churches of every denomination, singing schools and private societies, with plain rules for learners, by L. J. Jones: 8vo long, 280p --- Philadelphia, published by Grigg, Elliot & Co., 1849; deposited by C. Sherman, 10 November 1849.

KNEASS (Nelson) Old Aunty Brown, as sung by Mrs. C. Howard; poetry by the "Pale Student," altered from a Melody by Nelson Kneass, arranged for the Baltimore Olio, by William Cumming, [piano,] 4to 5p --- Cincinnati, published by Peters & Field, 1849; deposited by W. C. Peters, 22 December 1849.

"Old Aunty Brown," poetry by the "Pale Student," altered

from a melody by Nelson Kneass; arranged for the Baltimore Olio, by William Cumming. [guitar]: 4to 5p --- Cincinnati, published by Peters & Field, 1849; deposited by W. C. Peters, 22 December 1849.

LEACH (Stephen) Let all Obey, the celebrated encore song in Balfe's opera, *The Enchantress*. Composed and arranged with piano forte accompaniments, by Stephen Leach: 4to 5p --- New York, published by William Hall & Son, 1849; deposited by William Hall & Son, 14 December 1849.

LENSCHOW (C.) Betty Polka: composed for the piano forte by C. Lenschow: 4to 5p --- Baltimore, published by G. Willig, Jr., 1849; deposited by G. Willig, Jr., 4 April 1849.

LODER (George) The Bride; words by H. P. Grattan, music by George Loder: 4to 5p --- New York, published by William Hall & Son, 1849; deposited by William Hall & Son, 14 December 1849.

LONGFELLOW (Henry W.) See: Sanford (Lucy A.)

LOVER (Samuel) The Low Backed Car, written and composed by Samuel Lover, arranged for the Spanish Guitar by Henry Chadwick: 4to 2p --- New York, published by William Hall & Son, 1849; deposited by William Hall & Son, 14 December 1849.

Oh! watch you well by Daylight, composed by Samuel Lover, arranged for the Spanish Guitar by Charles Hess: 4to 3p --- New York, published by William Hall & Son, 1849; deposited by William Hall & Son, 14 December 1849.

MÆDER (James G.) The Maiden's Dream, ballad, written by J. E. Carpenter, Esq., music composed by James G. Mæder: 4to 7p --- New York, published by William Hall & Son, 1849; deposited by William Hall & Son, 14 December 1849.

Mine Own, ballad, written by Mrs. Charles Kean, composed by James G. Mæder: 4to 5p --- New York, published by William Hall & Son, 1849; deposited by William Hall & Son, 14 December 1849.

Were I but his own Wife, ballad, words from the "Dublin Nation," music composed by James G. Mæder: 4to 5p --- New York, published by William Hall & Son, 1849; deposited by William Hall & Son, 14 December 1849.

MARTIN (J.) The Old Gray Church; words by Alfred Tennyson, composed by J. Martin: 4to 5p --- published by George Willig, Jr., 1849; deposited by George Willig, Jr., 4 April 1849.

MASON (William) Fireside Harmony; a new collection of glees and part songs, arranged for soprano, alto, tenor, and bass voices: 8vo long, 128p --- Boston, published by Tappan, Whittemore & Mason, 1848; deposited by Tappan, Whittemore & Mason, 1848.

MASON (Lowell) and **WEBB** (George James) The Song Book of the school-room, consisting of a great variety of songs, hymns, and scriptural selections, with appropriate music, arranged to be sung in one, two, or three parts; containing also the elementary princi-

ples of vocal music, prepared with reference to the inductive or Pestalozzian method of teaching ; designed as a complete music manual for common or grammar schools, by Lowell Mason and George James Webb : 12mo long, 224p --- Boston, published by Wilkins, Carter & Co., 1847 ; deposited by Wilkins, Carter & Co., 1847.

The Primary School Song Book, in two parts ; the first part consisting of songs suitable for primary or juvenile singing schools, and the second part consisting of an explanation of the inductive or Pestalozzian method of teaching music in such schools : 12mo long, 96p --- Boston, published by Wilkins, Carter & Co., 1847 ; deposited by Wilkins, Carter & Co., 1847.

MASON (Lowell) The National Psalmist; a collection of the most popular and useful psalm and hymn tunes; together with a great variety of new tunes, anthems, sentences and chants : 8vo long, 352p --- Boston, published by Tappan, Whittemore & Mason, 1848; deposited by Tappan, Whittemore & Mason, 1848.

MATHEWS (John M.) Bertie Waltz, composed by John M. Matthews : 4to 2p --- Baltimore, published by G. Willig, Jr., 1848 ; deposited by G. Willig, Jr., 4 April 1849.

Edenton Quick Step, composed by John M. Matthews : 4to 2p --- Baltimore, published by G. Willig, Jr., 1849 ; deposited by G. Willig, Jr., 4 April 1849.

Reflection Waltz, composed by J. M. Mathews : 4to 2p --- Baltimore, published by G. Willig, Jr., 1849 ; deposited by G. Willig, Jr., 4 April 1849.

MEIGHAM (Thaddeus W.) See : California as it is.

MINNICK (G. W.) Washington Literary Association's quick step, as performed at their third annual entertainment by the Independent Greys' band ; composed and arranged by G. W. Minnick : 4to 2p --- Baltimore, published by G. Willig, Jr., 1849 ; deposited by G. Willig, Jr., 4 April 1849.

MULLER (Julius E.) Virginia's Waltz, composed by Julius E. Müller, 4to 2p --- Baltimore, published by G. Willig, Jr., 1849 ; deposited by G. Willig, Jr., 4 April 1849.

NAX (Joseph) Emilie Waltz, composed by Joseph Nax : 4to 2p --- Baltimore, published by George Willig, Jr., 1849 ; deposited by George Willig, Jr., 4 April 1849.

The Fredericksburg Serenading Waltz, composed by Joseph Nax : 4to 2p --- Baltimore, published by George Willig, Jr., 1849 ; deposited by George Willig, Jr., 4 April 1849.

NAUENBURG (G.) Love me — not with Fancy ; words from the Literary World, adapted to a melody by G. Nauenburg, arranged for the piano by Charles Grobe : 4to 5p --- Baltimore, published by George Willig, Jr., 1849 ; deposited by George Willig, Jr., 4 April 1849.

OH ! have I not been true to Thee, written and adapted to a beautiful melody by John H. Hewitt : 4to 5p --- Baltimore, published by

George Willig, Jr., 1849; deposited by George Willig, Jr., 4 April 1849.

“OH Susanna”; a popular Ethiopian song, arranged for the guitar by F. Weiland: 4to 2p --- Baltimore, published by W. C. Peters, 1849; deposited by Lee & Walker, 6 August 1849.

OH! Would I were a girl again, ballad, composed by Wellington Guernsey, arranged for the Spanish guitar by Henry Chadwick: 4to 2p --- New York, published by William Hall & Son, 1849; deposited by William Hall & Son, 14 December 1849.

OTTO (F.) I can't make up my Mind; words from Hood's Magazine, adapted to melody by F. Otto, and arranged for the piano, by Charles Grobe: 4to 5p --- Baltimore, published by G. Willig, Jr., 1849: deposited by G. Willig, Jr., 4 April 1849.

“Sunset on the Sea;” the poetry by Charles P. Shiras, adapted to a melody by F. Otto, arranged for the piano, by Charles Grobe: 4to 5p --- Baltimore, published by G. Willig, Jr., 1849: deposited by G. Willig, Jr., 4 April 1849.

PENDLETON (Mrs. Edward H.) See: E Pluribus Unum.

PETERS (W. C.) The Matamoros grand march, arranged and partly composed for the piano forte, by W. C. Peters --- Cincinnati, published by Peters & Field; deposited by W. C. Peters.

See: De Meyer; See: There's something on my lip, love; See: I may not meet thee; See: Drennon polka quadrilles.

POULTON (George R.) Buena Vista polka, by George R. Poulton: 4to 2p --- New York, published by William Hall & Son, 1849; deposited by William Hall & Son, 14 December 1849.

ROOT (George F.) and SWEETSER (Joseph E.) A collection of church Music; comprising many of the most popular and useful tunes in common use, together with a great variety of new and original psalm and hymn tunes, sentences, motets, anthems, chants, &c., designed for the use of choirs, congregations, singing schools, and societies: 8vo long, 348p --- New York, published by John Wiley, 1849; deposited by John Wiley, 25 August 1849.

SANFORD (Lucy A.) Stars of the Summer night, serenade; from the Spanish Student; written by H. W. Longfellow, composed by Lucy A. Sanford: 4to 3p --- New York, published by William Hall & Son, 1849; deposited by William Hall & Son, 14 December 1849.

SARONI (Herman S.) I wandered in the Woodlands. English words by Mrs. Osgood, German words by H. S. Saroni; music by H. S. Saroni: 4to 7p --- New York, published by William Hall & Son, 1849; deposited by William Hall & Son, 14 December 1849.

SCHNEIDER (J) Twigg's Riflemen's Quick Step, composed by J. Schneider: 4to 1p --- Baltimore, published by George Willig, Jr., 1849; deposited by George Willig, Jr., 4 April 1849.

SHELL (John) The Battle of Resaca de la Palma, composed for the piano forte by J. Schell: 4to 13p --- Baltimore, published by George

Willig, Jr., 1849 ; deposited by George Willig, Jr., 4 April 1849.

SEE that little flower so gay, for one or two voices, arranged by J. M. J. : 4to 4p --- New York, published by Jaques & Brother, 1849 ; deposited by Jaques & Brother, 19 December 1849.

SEIGLING (Marie R.) Souvenir de la Saxe, valse pour le piano forte. Précédée d'une introduction sentimentale composée par Marie R. Seigling : 4to 7p --- Baltimore, published by George Willig, Jr., 1849 ; deposited by George Willig, Jr., 4 April 1849.

SELLE (Louis) Mass for three Voices, by Louis Selle, 4to 34p --- New York, published by William Hall & Son, 1849 ; deposited by William Hall & Son, 14 December 1849.

SHIRAS (Charles P.) See : Otto F.

SIMONS (George W.) Be kind to each other, song for one or two voices, composed by George W. Simons : 4to 2p --- Cincinnati, published by W. C. Peters ; deposited by W. C. Peters.

SLOMAN (Jane) The Mosquito Polka, by Jane Sloman : 4to 5p --- New York, published by William Hall & Son, 1849 ; deposited by William Hall & Son, 14 December 1849.

SMITH (Henry) The Church Harmony, containing a selection of psalm and hymn tunes, set to pieces and anthems from the most approved authors, adapted to the divine worship of the various religious denominations; and a concise introduction to music. With additions and improvements, including a supplement or selection of sacred music, adapted to the service of the sanctuary, in the German language; also a series of practical lessons on time, notation, &c., on a new and improved arrangement. 26th edition. By Henry Smith : 16mo long, 355p---Chambersburg, published by the proprietor ; deposited by Henry Smith.

STODDARD (J. T.) Evergreen Waltz, composed by J. T. Stoddard : 4to 2p --- Baltimore, published by George Willig, Jr., 1849 ; deposited by George Willig, Jr., 4 April 1849.

STRAKOSCH (Maurice) Souvenir de l'Amerique. Amusement de Salon, sur les motifs Eteopiens, composé par M. Strakosch : 4to 9p --- Baltimore, published by W. C. Peters, 1849 ; deposited by W. C. Peters, 21 September 1849.

Mazurka Brillante, composed for the piano forte by M. Strakosch : 4to 5p --- Baltimore, published by W. C. Peters, 1849 ; deposited by W. C. Peters, 18 December 1849.

Mazurka Sentimentale, composed for the piano forte by M. Strakosch : 4to 5p --- Baltimore, published by W. C. Peters, 1846 ; deposited by W. C. Peters, 18 December 1849.

La Sylphide, Fantaisie Romantique, pour le piano, composée par Maurice Strakosch : 4to 15p --- New York, published by William Hall & Son, 1849 ; deposited by William Hall & Son, 14 December 1849.

The Moonlight of the Heart, a song ; the words by Mrs. Abdy, the music by Maurice Strakosch : 4to 7p --- New

York, published by William Hall & Son, 1849; deposited by William Hall & Son, 14 December 1849.

Souvenir de l'Amerique. Amusement de Salon, sur des motifs Etiopiens, composé par Strakosch : 4to 9p --- Baltimore, published by W. C. Peters, 1849; deposited by W. C. Peters, 6 August 1849.

SUSAN Rayne, a celebrated Ethiopian melody, arranged by E. P. Christy : 4to 7p --- New York, published by William Hall & Son, 1849; deposited by William Hall & Son, 14 December 1849.

SWEETSER (Joseph E.) See : Root (George F.)

TENNYSON (Alfred) See : Martin.

THERE'S something on my lip, Love ! ballad, written by W. D. Gallagher, adapted to an air, *quanto è bella, quanto è cara*, in Donizetti's opera, *L'Elisire d'Amour*, by W. C. Peters : 4to 7p --- Baltimore, published by George Willig, Jr., 1849; deposited by George Willig, Jr., 4 April 1849.

THOMAS (E.) The Tears of early Love, a favorite ballad, written by F. W. Thomas, the music composed by E. Thomas : 4to 5p --- Baltimore, published by William C. Peters, 1849; deposited by William C. Peters, 4 April 1849.

THOMAS (F. W.) See : Thomas E.

THORBECKE (E.) Homage to Mendelssohn; a scherzo for the piano forte, by E. Thorbecke : 4to 7p --- Baltimore, published by George Willig, Jr., 1849; deposited by George Willig, Jr., 4 April 1849.

TRIPP (L.) See : Hill, (U. C.)

TUCKERMAN (S. P.) **BANCROFT** (S. A.) and **OLIVER** (H. K.) The National Lyre, a new collection of sacred music, consisting of psalm and hymn tunes, with a choice selection of sentences, anthems and chants; designed for the use of choirs, congregations and singing schools : 8vo long, 160p --- Boston, published by Wilkins, Carter & Co., 1848; deposited by Wilkins, Carter & Co., 3 January 1848.

"**UNCLE NED**," an Ethiopian melody, arranged by E. S. Chandler : 4to 2p --- Cincinnati, published by Peters, Field & Co.; deposited by Mason, Colburn & Co., 6 August 1849.

"**UNCLE NED**," a popular Ethiopian song, arranged for the guitar by F. Weiland : 4to 2p --- Baltimore, published by William C. Peters, 1849; deposited by Lee & Walker, 6 August 1849.

VON LA HACHE (Theodor) Locomotive Polka, composed for the piano forte by Theodor Von La Hache; 4to 4p --- New York, published by William Hall & Son, 1849; deposited by William Hall & Son, 14 December 1849.

WARREN (George W.) Broadway Waltzes. No. 1, composed for the piano forte by George W. Warren : 4to 5p --- New York, published by William Hall & Son, 1849; deposited by William Hall & Son, 14 December 1849.

WATSON (Henry F.) See : Balmer (Charles.)

WATSON (Henry C.) Asthore Macree, a song for my own love; words from

the Dublin Nation, music by Henry C. Watson: 4to 5p --- New York, published by William Hall & Son, 1849; deposited by William Hall & Son, 14 December 1849.

WEBB (George James) See: Mason (Lowell.)

WEILAND (F.) See: Uncle Ned.

WOLSIEFFER (P. M.) Practical instruction in Singing, for schools and singing classes, complete in four parts, Part 1. By P. M. Wolsieffer: 4to long, 19p --- Philadelphia, published by P. M. Wolsieffer and M. H. Traubel, 1849; deposited by P. M. Wolsieffer and M. H. Traubel, 12 August 1849.

WOODBURY (I. B.) The Fisherman's Song, poetry by W. B. I., music composed by I. B. Woodbury, [being No. 5, of] Lays of New England: 4to 5p --- New York, published by William Hall & Son 1849; deposited by William Hall & Son, 14 December 1849.

Good Night, duett, words by W. B. I., music composed by I. B. Woodbury, [being No. 6 of] Lays of New England: 4to 5p --- New York, published by William Hall & Son, 1849; deposited by William Hall & Son, 14 December 1849.

PART III---LIST OF MAPS, CHARTS, PRINTS AND LABELS.

ANDREWS (S. P.) and BOYLE (A. F.) Elements of Phonography: chart No. 2; deposited by Andrews & Boyle.

Compendium of Phonography: [one sheet;] deposited by S. P. Andrews & A. F. Boyle.

BADLAM (Otis G.) The Common-School writing-book. In five numbers --- New York, published by Collins & Brother, 1848; deposited by O. G. Badlam.

BONNER (William G.) Pocket map of the State of Georgia --- Published at Milledgeville, 1848.

BREESE (Samuel, A. M.) Harper's Cereographic map of the United States and Canada, showing the canals, railroads and principal stage routes --- New York, published by Harper & Brothers, 1847; deposited by Harper & Brothers.

BRUFF (J. G.) A correct map of the seat of War in Mexico --- New York, published by J. Disturnell, 1847.

Map of the Valley of Mexico, and the surrounding mountains --- New York, published by J. Disturnell, 1847.

COLE (James) Time's Day Book.

CROZET (C.) A map of the Internal Improvements of Virginia, prepared under a resolution of the General Assembly, adopted March 15, 1848. Engraved by P. S. Duvall, Philadelphia: deposited by Claudius Crozet.

- DISTURNELL** (John) *United States National Register*, 1850: New York, published by J. Disturnell, 1849; deposited by J. Disturnell.
- DOTY** (H. H.) *Susannah and the Elders*: drawn on stone by N. Sarony; the original by Louis Blanc — Philadelphia, published by H. H. Doty, 1849; deposited by H. H. Doty.
- FAC SIMILE** of the Autographs of the merchants and other citizens of Philadelphia, as subscribed to the non-importation resolutions, October 25, 1765: one sheet — Philadelphia, published and deposited by Thomas Fisher.
- FISHER** (Samuel B.) and **SHEAFER** (P. W.) Map of the first and second anthracite coal fields in Pennsylvania; embracing Schuylkill county, and parts of Carbon, Luzerne, Columbia, Northumberland, Dauphin and Lebanon counties — Philadelphia, published by Robert P. Smith; deposited by Robert P. Smith.
- FITCH** (George W.) Mapping cards, Nos. 1, 4, and 5. Brooklyn, published by A. M. Wilder, 1848; deposited by A. M. Wilder & Co., and George W. Fitch.
- FOWLE** (William B.) Outline maps, viz: Asia, Africa, Europe, North America, South America, United States, Eastern Hemisphere, and Western Hemisphere; deposited by William B. Fowle.
- GOLDTHWAIT** (J. H.) Railroad map of New England, and eastern New York. Compiled from the most authentic sources, 1849: deposited by J. H. Goldthwait.
- GRIFFITH** (Francis P.) A chart, containing the names of Senators of the United States, from every State in the Union, from the commencement of the Federal Government to the present period; also, the names of Presidents and Vice Presidents, Cabinet officers, &c.; Columbus, published by F. W. Murray & Co., 1849; deposited by F. P. Griffith.
- HUBBARD** (Edwin) *The Ancestral Register*, [chart]; published by Kellog & Hubbard, Hartford, Connecticut.
- JEWETT** (Dr. Stephen,) *Celebrated health restoring bitters*, [label]; deposited by S. Jewett & Co.
- Highly celebrated pulmonary Elixir, &c., [label]; deposited by S. Jewett & Co.
- Highly and justly celebrated strengthening plaster, &c., [label,] deposited by S. Jewett & Co.
- JOHNSON** (D. G.) Colton's illustrated and embellished steel plate map of the World, on Mercator's projection, compiled from the latest and most authentic sources — New York, published by J. H. Colton, 1849; deposited by J. H. Colton.
- LAPHAM** (J. A.) Map of the State of Wisconsin, compiled from the latest authorities — Milwaukee, Wisconsin, 1849; deposited by J. A. Lapham.
- MAP OF MEXICO**: Mapa de los Estados Unidos de Méjico, Segun la organizado y definido por los varias actas del Congreso de dicha Republica; y construido por las autoridades — Nueva York, 1847;

revised edition, published by J. Disturnell ; deposited by J. Disturnell.

MAP of the countries embraced within the travels of St. Paul ; deposited by A. M. Wilder & G. W. Fitch.

MAP of the States of Missouri, Illinois, Iowa and Wisconsin; the territory of Minnesota, and the mineral lands of Lake Superior — Philadelphia, published by Thomas, Cowperthwait & Co., 1849 ; deposited by Thomas, Cowperthwait & Co.

MUSURY's compound extract of Sarsaparilla and Wau-a-hoo, [label.]

MURRAY (H. C.) Original patterns for Gothic railings. No. 1, Farnandis' fancy ; No. 4, Jones' fancy.

OLNEY (J.) Outline maps for common schools, viz : North America, South America, World, Europe, Asia, Africa, United States, Atlas folio — New York, published by Pratt, Woodford & Co., 1847 ; deposited by J. Olney,

OTLEY (J. W.) and WHITEFORD (R.) Map of Burlington county, N. Jersey, from original surveys — Philadelphia, published by Smith & Wistar, 1849.

And KELLY (J.) Map of Mercer county, New Jersey, entirely from original surveys — Camden, published by Lloyd Van Der Veer ; deposited by Robert P. Smith.

REA (Samuel M.) and PRICE (Jacob) Map of New Castle County, Delaware, from original surveys : Philadelphia, published by Smith & Wistar, 1848 ; deposited by Robert P. Smith.

SIDNEY (J. C.) Map of twelve miles around New York, with the names of property holders, &c. From entirely new and original surveys : Philadelphia, engraved on stone by N. Friend, printed by H. Camp ; deposited by J. C. Sidney.

Map of the City of Trenton, New Jersey, from actual surveys : Philadelphia, published by M. Dripps, 1849 ; deposited by M. Dripps.

Map of the City of Philadelphia, together with all the surrounding districts, including Camden, New Jersey : Philadelphia, published by Smith & Wistar, 1849 ; deposited by Robert P. Smith.

SMITH (J. Calvin) Map of the State of New York, showing the boundaries of counties and townships, the location of cities, towns and villages ; the courses of railroads, canals and stage roads : New York, published by J. Disturnell, 1848 ; deposited by J. Disturnell.

STANSBIE (Alexander C.) KELLEY (James) and (REA Samuel M.) A Map of the counties of Salem and Gloucester, New Jersey, from original surveys : Philadelphia, published by Smith & Wistar, 1849 ; deposited by Smith & Wistar.

STEBBINS (L.) A new system of Public Advertising, designed to occupy the back, border, and blank places of maps and other prints, not coming under the head of general news prints ; a chart.

STEVENS (Enos) Diagram of the Solar System, adapted to Stevens' rudi-

ments of Astronomy : Boston, 1849 ; deposited by E. Stevens.

Phrenological Chart. Lithographed by Tappan & Bradford, Boston ; deposited by Enos Stevens.

STUDENTS Magazine, (in raised letters for the use of the blind) : 8 pages folio.

TABLE OF WAGES from one to thirty days, at from eight to forty dollars per month. Buffalo, published by L. Danforth & Co.

TELLERS (C. W.) System of cutting [Garments] ; chart.

TEMPERANCE TABULA and Family Pledge : engraved by E. Chase, 1848 ; deposited by Orlando Lund.

WEBSTER (E. L.) The Dress Maker's Chart ; deposited by E. L. Webster, 1849.

WINCHESTER (George W.) Drawing and Writing Cards, accompanied by a key with ample directions ; in four parts ; part 1, two copies, atlas folio : Hartford, published by H. S. Parsons & Co. ; deposited by G. W. Winchester, 1849.

APPENDIX TO LIBRARIAN'S REPORT.

NO. 2.

COPY-RIGHT PUBLICATIONS FOR 1850.

LIST of Books, Maps, Charts, Musical Compositions, &c., delivered to the Librarian of the Smithsonian Institution, from January 1, to December 31, 1850 ; in compliance with the following requirement of the Act of Congress, approved August 10, 1846, establishing the Smithsonian Institution :

“ SECTION 10. *And be it further enacted*, That the author or proprietor of any Book, Map, Chart, Musical Composition, Print, Cut, or Engraving, for which a copy right shall be secured under the existing acts of Congress, or those which shall hereafter be enacted respecting copy rights, shall, within three months from the publication of said Book, Map, Chart, Musical Composition, Print, Cut, or Engraving, deliver, or cause to be delivered, one copy of the same to the Librarian of the Smithsonian Institution, and one copy to the Librarian of Congress Library, for the use of the said Libraries.”

PART I. — BOOKS.

“ II. — MUSICAL COMPOSITIONS.

“ III. — MAPS, PRINTS, &c. &c.

PART I. — BOOKS.

ABBOTT (Jacob,) History of William the Conqueror. By Jacob Abbott; with engravings: 16mo 291p — New York, published by Harper & Brothers; deposited by Harper & Brothers, March 1850.

History of Cyrus the Great, by Jacob Abbott; with engravings: 16mo 289p — New York, published by Harper & Brothers, 1850: deposited by Harper & Brothers, 20 May 1850.

History of Darius the Great, by Jacob Abbott; with engravings: 12mo 286p — New York, published by Harper & Brothers, 82 Cliff street, 1850; deposited by Harper & Brothers, 20 August 1850.

History of Xerxes the Great, by Jacob Abbott; with engravings: 16mo 302p — New York, Harper & Brothers, publishers, 82 Cliff street; deposited by Harper & Brothers, 19 October 1850.

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The Principal Prophecies and Types of the Old Testament, with their fulfilment ; arranged in the very words of Scripture, for the use of Sunday Schools. By the Rev. Benjamin Dorr, D. D., Rector of Christ Church, Philadelphia : 12mo 72p—Philadelphia, published by Robert E. Peterson, 1850 ; deposited by Benjamin Dorr, D. D., 12 August 1850.

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- FURNISS** (William) Landvoieglee : or Views Across the Sea ; A new edition of the "Old World." By William Furniss. With a map and numerous tinted Lithographs : 12mo 290p — New York, published by D. Appleton & Co., 1850 ; deposited by William Furniss, 25 March 1850.
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GRAY (Thomas) The Poetical Works of Thomas Gray. Illustratd by C. W. Radcliffe. Edited, with a Memoir, by Henry Reed:

12mo 334p—Philadelphia, Henry Carey Baird, successor to E. L. Carey, 1851; deposited by Henry Carey Baird, 5 December 1850.

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GREENWOOD (Grace) [Pseud. for Sara J. Clarke.] *Greenwood Leaves, a Collection of Sketches and Letters.* By Grace Greenwood: [Sara J. Clarke]: 12mo 406p.—Boston, Ticknor, Reed & Fields, 1850; deposited by Sara J. Clarke, 8 January 1850.

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GUIDE to the White Mountains and Lakes of New Hampshire: with minute and accurate descriptions of the scenery and objects of interest on the route; containing also full and correct information, relative to the towns, hotels, distances, fares, &c.: 16mo 9p—Concord, N. H., published by Tripp & Morril, printers, 1850; deposited by E. B. Tripp & W. H. Morril, 1 July 1850.

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HART (Professor John S.) *The Iris; an illuminated Souvenir for 1851.* Edited by Professor John S. Hart: 8vo large, 312p — Philadelphia, published by Lippincott, Grambo & Co., 1850; deposited by Lippincott, Grambo & Co., 28 September, 1850.

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HEADLEY (Rev. J. T.) *The Miscellaneous Works of Rev. J. T. Headley.* With a biographical sketch and portrait of the Author. In two volumes: 12mo Vol. 1, 322p; Vol. 2, 319p—New York, published by John S. Taylor, 1849; deposited by John S. Taylor, 24 January 1850.

Miscellanies. By J. T. Headley. Authorized edition: 12mo 298p — New York, published by Baker & Scribner, 1850; deposited by J. T. Headley, 25 March 1850.

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- MATTOON (Charles H.) *Analytic Series, No. 2. Common arithmetic upon the analytic method of instruction; also, the principles of cancellation, and other modern improvements.* The whole made simple and easy by numerous practical examples. Designed for the use of schools. By Charles H. Mattoon: 12mo 388p — steam press of S. Medary: deposited by Charles H. Mattoon 25 April 1850.
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MILES (Josiah) Miles' United States Spelling Book, comprising the rudiments of the English Language, the Alphabet, and a series of spelling lessons, in five parts, containing over fifteen thousand of the most common English words, spelled and pronounced in accordance with the best authenticated usage ; also, an extensive pronouncing list of American and Foreign Geographical names : to which is appended a list of about five hundred words of various orthography, and a brief synopsis of words differently pronounced by different authors. By Josiah Miles : 12mo 158p — New York, published by Cornish, Lamport & Co., 1850 ; deposited by Josiah Miles, 19 August 1850. Another copy, stereotype edition, deposited 20 November 1850.

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MITCHELL (S. Augustus) Mitchell's Biblical and Sabbath School Geography, designed for instruction in Sabbath Schools and Bible classes : comprising a geographical description of Palestine or the Holy Land ; with the other regions mentioned in the Scriptures of the Old and New Testament. Illustrated with colored Maps and Wood Cut engravings. By S. Augustus Mitchell : 12mo 122p — Philadelphia, published by Thomas, Cowperthwait & Co., 1849 ; deposited by Thomas, Cowperthwait & Co., 7 March 1850.

Mitchell's Primary Geography. An Easy Introduction to the Study of Geography ; designed for the instruction of children in schools and families. Illustrated by 120 Engravings and 14 Maps. By S. Augustus Mitchell ; 2d Revised Edition : 16mo 176p — Philadelphia, published by Thomas, Cowperthwait & Co ; deposited by S. Augustus Mitchell, 7 March 1850.

Mitchell's Intermediate or Secondary Geography. A System of Modern Geography, comprising a description of the present state of the world, and its five great divisions, America, Europe, Asia, Africa, and Oceanica, with their several Empires, Kingdoms, States, Territories, &c. Illustrated by 40 Maps, and numerous wood-cut engravings. Designed for the instruction of youth in schools and families. By S. Augustus Mitchell : 4to. 80p. — Philadelphia, published by Thomas, Cowperthwait & Co, 1850 ; deposited by S. Augustus Mitchell, 7 March 1850.

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MITCHELL (Thomas D., A. M., M. D.,) *Materia Medica and Therapeutics*: with ample illustrations of practice in all the departments of Medical science, and very copious notices of Toxicology. Suited to the wants of Medical students and Practitioners. By Thomas D. Mitchell, A. M., M. D., &c.: 8vo large, 738p — Philadelphia, Lippincott, Grambo & Co., 1850; deposited by Thomas D. Mitchell, 19 September 1850.

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NORVEL Hastings; or, The Frigate in the Offing. A Nautical Tale of the War of 1812. By a distinguished Novelist. Complete in one Volume: 8vo 143p — Philadelphia, published by A. Hart, 1850; deposited by A. Hart, 10 August 1850.

(**OLD**) Farmer's Almanack (The) No. 59; calculated on a new and improved plan: for the year of our Lord, 1851; being third after Bissextile or leap year, and (until July 4) 75th of American Independence. Fitted for the city of Boston, but will answer for all the New England States; containing, besides the last number of astronomical calculations, and the Farmer's Calendar for every month in the year, as great a variety as any other Almanack of new, useful, and entertaining matter. Established in 1793, by Robert B. Thomas. Boston, published by Jenks, Palmer & Co.; deposited by J. H. Jenks and G. W. Palmer, 18 October, 1850.

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OTT (James Cramer.) The Truth ; according to and with the Word. By James Cramer Ott : pamphlet, 8vo 128p — city of Albany, and state of New York, A. D., 1850 : deposited by James Cramer Ott, 25 November, 1850.

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PAINTER, Gilder and Varnisher's Companion (The) ; containing rules and regulations in every thing relating to the arts of painting, gilding, varnishing and glass staining ; numerous useful and valuable receipts ; tests for the detection of adulterations in oils, colours, &c. ; and a statement of the diseases and accidents to which painters, gilders and varnishers are peculiarly liable, with the simplest and best methods of precaution and remedy : 12mo — Philadelphia, published by H. C. Baird, 1850 ; deposited by H. C. Baird, 6 August, 1850.

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PRICE (Joseph M.) Interest Tables, at 5, 6 & 7 per cent. per annum; each rate exhibiting the interest on all sums from one dollar to ten thousand dollars, from one to three hundred and sixty-five days; computed at three hundred and sixty days per annum, three hundred and sixty-five per annum, and by months and days. By Joseph M. Price; folio 182p—New York, published by W. W. Rose, 1850; deposited by Joseph M. Price, 13 May 1850.

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Manual for Magnetizing, with the vibrating Magnetic Machine, and for the magnetic duodynamic treatment of disease; with a brief synopsis of Animal Magnetism, Homeopathy and Allopathy, with anatomical and other illustrations. By H. H. Sherwood, M. D.; Fourteenth edition; Revised by H. H. Sherwood's successors, 102 Chambers street, New York: 16mo 372p — New York, published by Fowlers & Wells, 1850; deposited by William Larned, 15 March 1850.

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The Life of Nathaniel Green, Major General in the Army of the Revolution. Edited by W. Gilmore Simms, Esq.: 12mo 393p — New York, published by Geo. T. Cooledge & Bro.; deposited by G. T. Cooledge & Bro., 21 March 1850.

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SMITH (Asa) *Smith's Illustrated Astronomy*, designed for the use of public or common schools in the United States. Illustrated with numerous original diagrams. By Asa Smith; sixth edition: 4to 68p — New York, Cady & Burgess, 1850; deposited by Asa Smith, 17 December 1850.

An abridgement of Smith's illustrated Astronomy, designed for the use of junior classes in the public or common schools in the United States. By Asa Smith. Fifth edition: 12mo 72p — New York, published by Cady & Burgess, 1850; deposited by Asa Smith, 17 December 1850.

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SMITH (Henry H., M. D.) *Minor Surgery; or, Hints on the every-day duties of the Surgeon.* By Henry H. Smith, M. D., &c. Third edition, with numerous additions. Illustrated by two-hundred and forty-seven engravings: 12mo 456p — Philadelphia, Edmund Barrington & George D. Haswell; deposited by Barrington & Haswell, 23 October 1850.

SMITH (Phineas A.) *Every Body's Book. The Bible view of the Soul; Personality of God, the Devil, his origin, personality and doom; also an exposition of the spiritual rapping.* By Phineas A. Smith: 12mo 96p — Rochester, N. Y., published by Smith & Clough, 1850; deposited by P. A. Smith, 14 June 1850.

(Roswell C., A. M.) *An Introductory Geography, designed for children; illustrated with one hundred and twenty-six engravings, and twenty maps.* Tenth edition. By Roswell C. Smith, A. M.: 16mo 176p — New York, published by Cady & Burgess, 1850; deposited by Roswell C. Smith, 17 December, 1850.

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The Practice in civil actions and Proceedings at Law, in Ohio, and precedents in pleading, with practical notes; together with the form of process and clerk's entries. By Joseph R. Swan. In two volumes, vol. 2: 8vo large, 740p — Columbus, published by I. N. Whiting, 1850; deposited by I. N. Whiting, 27 May 1850.

TALVI [Pseud. for Mrs. Edward Robinson, formerly Theresa Adolfini, Louisa von Jacob] *Historic view of the languages and literature of the Slavic Nations; with a sketch of their popular poetry.* By Talvi, [Mrs. Robinson.] With a preface by Edward Robinson, D. D. LL. D.: 12mo 412p — New York, published by George P. Putnam, 1850; deposited by Edward Robinson, 29 April 1850.

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Ticknor (George) *History of Spanish Literature.* By George Ticknor; in 3 vols: 8vo large, vol. 1, 568p; vol. 2, 552p; vol. 3, 549p — New York, published by Harper & Brothers, 1849; deposited by George Ticknor, 12 January 1850.

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first principles of elocution ; designed to follow the "Introduction," and to precede the "Gradual Reader." By David B. Tower, A. M. 12mo 162p — New York, Cady & Burgess — Boston, W. J. Reynolds & Co., 1850 ; deposited by David B. Tower, 17 December, 1850.

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AMELIE WALTZ (The) as played by Munck's Band at the United States Hotel, Saratoga Springs. Arranged by Johann Munck: 4to 5p — New York, published at Vanderbeek's music warerooms; deposited by William Vanderbeek, 20 December 1850.

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- BEAUTIFUL Isle ; Song, addressed to Dauphin Island, Mobile Point, Fort Boyer, Alabama. Adapted to a favorite Polish air, by James G. Drake : 4to 5p — Louisville, Ky., published by Peters, Webb & Co. ; deposited by Peters, Webb & Co., 5 October 1850.
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BOWL'D Sojer Boy. Arranged by J. E. Müller, [being No. 10, second
series of cottage Duets:] 4to 3p—Baltimore, published by
George Willig, Jr., 1850; deposited by G. Willig, Jr., 21
February 1850.

BRÂNDEIS (Fred.) The Standard Bearer. Grand March, by Fred. Brandeis:
4to 5p—New York, published by Firth, Pond & Co., 1850;
deposited by Firth, Pond & Co., 9 April, 1850.

BRISTOW (Geo. F.) La Belle Amerique; nocturne pour le Piano. Com-
posée et dédié à M^{lle} Fanny Miller, par Geo. F. Bristow; Op.
4: 4to 9p—New York, published by S. Pearson, 1850; de-
posited by Geo. F. Bristow, 11 October, 1850.

La Sérénade nocturne pour le Piano, par Geo. F. Bris-
tow; Op. 8: 4to 9p—New York, published by S. Pearson, for
the Author; deposited by Geo. F. Bristow, 7 June, 1850.

I would I were a favorite Flower. Written by Emerald
T. Wilson. Sung by Mr. Griswold. Music by G. F. Bristow:
4to 5p—deposited by G. F. Bristow, 7 June, 1850.

Tripler Schottisch. Composed by Geo. F. Bristow: 4to
5p—New York, published by S. Pearson; Firth, Pond & Co.;
Dubois & Warriner; William Vanderbeek; deposited by Sidney
Pearson, 30 December, 1850.

BROWN (Geo. S.) The Dying Mariner. A Song, written by J. S. Wilson.
Composed by Geo. S. Brown: 4to 5p—Baltimore, published

by W. C. Peters, 1850; deposited by W. C. Peters, 16 October, 1850.

- BROWN.** *Le Chant Americaine.* Variations on Brown's popular melody, Will you come to my Mountain Home. For the piano forte, by Samuel Owen: 4to 8p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 February, 1850.
- BRUHNS** (J. J. W.) *Jenny Lind's Diamond Waltz.* Composed for the piano, by J. J. W. Bruhns 4to 7p — Boston, A. & J. P. Ordway, 1850; deposited by A. & J. P. Ordway, 19 October, 1850.
- BRYANT** (Mad'lle. S.) *Fantaisie Brillante sur une Valse de Mad'lle. S. Bryant.* Arrangée et variée pour le piano par C. Baldwin: 4to 11p — Baltimore, published by G. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February, 1850.
- BUCKLEY** (R. Bishop, Esq.) *Jenny Lane.* Words and music by R. Bishop Buckley, Esq. Arranged for the piano, by J. P. Ordway: 4to 5p — Boston, published by A. & J. P. Ordway, 1850; deposited by A. & J. P. Ordway, 19 October, 1850.
- BURROWES'** *Piano Forte Primer;* containing the rudiments of Music, calculated either for private tuition or teaching in classes. Revised and enlarged, with additions and alterations, by W. C. Peters: 12mo 58p — Louisville, published by Peters, Webb & Co., 1849; deposited by Peters, Webb & Co., 25 May, 1850.
- CAMPO** del Gloria, being No. 1, of "Flowers of Andalusia." A selection of Spanish melodies. Arranged for the guitar by Mad. Knoop: 4to 5p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 6 August, 1850.
- CAMP** of Glory, being No. 4, of W. C. Peters & Co.'s selection of admired duetts, for two performers on the piano forte. Arranged by W. C. Peters: 4to 5p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 6 August 1850.
- "**CAN** I e'er forget the Valley." Song or Duett. Arranged as a duett for the piano forte by A. Phillips; 4to 2p — New York, published by Wm. Hall & Son, 1850; deposited by Wm. Hall & Son, 3 May 1850.
- CANDY** (John) "Farewell! Farewell is often heard." Words from the "London Despatch." Composed and arranged for the piano forte by John Candy: 4to 5p — Louisville, published by Peters, Webb & Co, 1850; deposited by Peters, Webb & Co., 25 May 1850.
- The Peasant Wife. Words by the Hon. Mrs. Norton. Music by John Candy: 4to 5p — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May 1850.
- CARDEN** (Allen D.) New Edition. *The Missouri Harmony;* or, a collection of psalm and hymn tunes, and anthems, from eminent authors; with an introduction to the grounds and rudiments of music. In four parts. By Allen D. Carden. Containing a number of admired tunes of the various meters; and several choice pieces, selected from some of the most approved collections of sacred music.

Revised, enlarged, and corrected. By Charles Warren: 8vo long, 268p — Cincinnati, published by William Phillips & Co., 1850; deposited by Morgan & Sanxay, 2 December, 1850.

CARNIVAL de Venise. Being No. 5 of Gems from the Operas, arranged for the Harp, by T. H. Williams: 4to 8p — New York, published by J. F. Browne, 1850; deposited by J. F. Browne, 21 February 1850.

CARPENTER (Samuel) "Ever be joyous." Words by J. B. Murphy. Music composed by Samuel Carpenter. Arranged by Miss Mary Coxhead: 4to 5p — Philadelphia, Couenhoven & Duffy; deposited by Couenhoven & Duffy, 21 December 1850.

CARSTENSEN (Henry) "If I had thought thou couldst have died. Words by Wolfe. Music by Henry Carstensen: 4to 2p — Louisville, Ky., published by Peters, Webb & Co.; deposited by Peters, Webb & Co., 5 October 1850.

CHADWICK (Henry) Mountain Hunter's Waltz. Arranged from the Opera of Amelie, by Henry Chadwick: 4to 5p — New York, published by William Hall & Son, 1850; deposited by William Hall & Son, 1 March 1850.

Minstrel Waltz. Composed and arranged for the piano forte by Henry Chadwick: 4to 3p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 February 1850.

CHRISTIAN Melodies: a Selection of Hymns and Tunes designed for Social and Private Worship in the Lecture Room and the Family. Edited by George B. Cheever, D. D., and J. E. Sweetser: 12mo. 252p — New York, published by A. S. Barnes & Co., 1851; deposited by A. S. Barnes & Co., 5 December 1850.

CHRISTY'S Jane Monroe. A celebrated Ethiopian Melody, as sung by the Christy Minstrels. Words by G. W. Donelson, Esq. Arranged by E. P. Christy: 4to 5p — New York, published by William Hall & Son 1850; deposited by William Hall & Son, 21 June 1850.

Katy Dean. A celebrated Ethiopian Melody, as sung by the Christy Minstrels. Words by T. Vaughn. Arranged by E. P. Christy: 4to 5p — New York, published by William Hall & Son, 1850; deposited by William Hall & Son, 3 May 1850.

COLE (Geo. F.) Governor Seabrook's Quickstep, composed at the request of the Washington Light Infantry. By George F. Cole: Charleston, published by George F. Cole, 1850: deposited by William Hall & Son, 3 May 1850.

CONE (Solomon) The Harmonia; A new collection of easy songs, composed and arranged for one, two, three, and four voices, with a new set of rules and practical exercises, upon an original and scientific plan, for the use of schools, singing classes, and social circles. By Solomon Cone: 12mo long, 134p — Albany, Erastus H. Pease & Co., 1850: deposited by E. H. Pease & Co., 10 October 1850.

COOK (John C.) "Lexington Polka," composed and arranged for the piano By John C. Cook: 4to 3p — Louisville, published by H. J. Peters & Co., 1850; deposited by H. J. Peters, 25 May 1850.

Good Night Mamma! Good Night! or, the Dying Child: words by Dr. William T. Knight, music by J. C. Cook: 4to 5p — Louisville, Kentucky, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 5 October 1850.

"Mammoth Cave Waltz," composed and arranged for the piano forte by J. C. Cook: 4to 5p — Louisville, published by Peters & Webb, 1850; deposited by Peters & Webb, 5 October 1850.

Cedar Hill Waltz, composed and arranged for the piano. By J. C. Cook: 4to 2p — Louisville, published by H. J. Peters & Co., 1850; deposited by H. J. Peters, 25 May 1850.

Kentucky Polka. Composed for the piano forte by J. C. Cook: 4to 5p — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May 1850.

"Summer Season," being No. 2 of "The Season Waltzes," by John C. Cook: 4to 5p — Louisville, published by Peters & Webb, 1850; deposited by Peters & Webb, 25 May 1850.

Fall-Season Waltz. Composed and arranged for the piano forte by John C. Cook: 4to 3p — Louisville, published by Peters & Webb, 1850; deposited by Peters & Webb, 25 May 1850.

"Winter-Season," being No. 4 of "The Season-Waltzes," by John C. Cook: 4to 5p — Louisville, published by Peters, Webb & Co.; deposited by Peters, Webb & Co., 25 May 1850.

Lexington Quick Step. Composed and arranged for the piano forte, by John C. Cook: 4to 5p — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May 1850.

COOPER (Adeline Maxwell, of London) Grand National Waltzes, dedicated to Gen. Z. Taylor, President United States. Composed by Adeline Maxwell Cooper (of London): 4to 11p — New York, published by William Hall & Son, 1850; deposited by William Hall & Son, 3 May 1850.

COPPOCK (W. R.) Eglantine Divertimento for the Piano Forte. Composed by W. R. Coppock: 4to 7p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 April, 1850.

COQUETTE Schottisch Polka, as played by Munck's Soirée Band. Arranged by Johann Munck: 4to 5p — New York, published at Vanderbeek's; deposited by Wm. Vanderbeek, 4 October, 1850.

COQUETTE Schottisch (The.) Being No. 1 of Guitarist's Gleanings; a collection of operatic Gems, polkas, waltzes, &c. Arranged for the guitar, by J. Ballard: 4to 5p — New York, published at Vanderbeek's, 1850; deposited by Wm. Vanderbeek, 4 October, 1850.

COUENHOVER (James.) Philadelphia Mazurka Quadrilles, Nos. 1, 2, 3, 4 and 5; for the piano forte. Composed and arranged by James

- Couenhover: 4to 7p — New York, published by Wm. Hall & Son, 1850; deposited by Wm. Hall & Son, 1 March, 1850.
- COVERT (Bernard.) "Brother, speak in whispers light;" or, "The Bride's Departure." Words by Capt. Patten, U. S. A. Music composed by Bernard Covert: 4to 5p — Boston, published by A. & J. P. Ordway, 1850; deposited by A. & J. P. Ordway, 19 October, 1850.
- CROUCH (Thomas.) Then blame not time. Words by J. H. Macmichael. Composed and arranged for the guitar, by Thomas Crouch: 4to 2p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 February, 1850.
- CUMMING (Wm.) Irmãa Maria! Duetto for two equal voices. Words by W. H. Donoho. Composed and arranged for the piano forte, by Wm. Cumming: 4to 5p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 6 August, 1850.
- CURTISS (N. P. B.) The Hindoo Slave Girl. Words by M. S. Pike, Esq. Music by N. P. B. Curtiss: 4to 5p — Boston, published by A. & J. P. Ordway; deposited by A. & J. P. Ordway, 19 Oct. 1850.
- When Slumber Sweet. Poetry by Marshall S. Pike, Esq. Music composed for the piano by N. P. B. Curtiss: 4to 5p — Boston, published by A. & J. P. Ordway, 1850; deposited by A. & J. P. Ordway, 19 October 1850.
- DEEMS (James M.) Vocal music Simplified: an elementary and progressive method of teaching vocal music in classes. With original exercises in solfeggi and vocalization. By James M. Deems. [In two numbers. No. 1, treble, &c. No. 2 bass:] 8vo bass, 112p; tenor, 112p — Baltimore, published by George Willig, Jr., 1849; deposited by James M. Deems, 21 May, 1850.
- DEH CON TE. (Norma) Arranged for the Harp by T. H. Williams. Being No. 4 of Gems from the Operas: 4to 11p — New York, published by J. F. Brown, 1850; deposited by J. F. Brown, 21 February 1850.
- DE LUCE (George) City Guard Quick Step. Composed and arranged for the piano forte by George De Luce: 4to 4p — New York, published by Jaques & Brother, 1850; deposited by Jaques & Brother, 28 January 1850.
- DE MEYER. When Twilight is Closing. Ballad. Words by F. Cosby. Melody from De Meyer's celebrated "Chant Bohemienne." Arranged for the guitar by W. C. Peters: 4to 5p — New York published by William Hall & Son, 1850; deposited by William Hall & Son, 3 May 1850.
- DENSARI (P. Y.) "Softly the Moon, my love." A Serenade, written by C. W. Everest, Esq. Music composed by P. Y. Densari: 4to 5p — New York, published by Sidney Pearson, 1850; deposited by Sidney Pearson, 7 June 1850.
- DODWORTH (Allen) Dark Sett Quadrilles, Nos. 1, 2, 3, 4 and 5. Arranged by Allen Dodworth: 4to 7p — N. York, published by W. Hall & Son, 1850; deposited by W. Hall & Son, 1 March, 1850.
- DONIZETTI. Spirito Gentil. Spirit of Light; Cavatina; La Favorita. Doni-

zetti. Being No. 1 of Boquet of Operatic Songs: 4to 5p — New York, published at Vanderbeek's Music Warerooms, 1850; deposited by William Vanderbeek, 7 November 1850.

DONIZETTI. Change not Thou. Song written by F. Cosby, Esq. Melody by Donizetti. Arranged for the guitar by W. C. Peters: 4to 3p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 7 June 1850.

Ah! tender Floweret. A favorite Song. Words and arrangement by Henri. Music by Donizetti: 4to — New York, published by Jaques & Brother, 1850; deposited by Jaques & Brother, 22 March 1850.

Change not Thou. Song written by F. Cosby, Esq. Melody by Donizetti. Arranged by William C. Peters: 4to 3p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 February 1850.

ECKARDT (Charles.) Baton Rouge Grand March and Quick Step. Composed and arranged for the piano forte by Charles Eckardt: 4to 5p — Baltimore, published by G. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February 1850.

ECHO Song (The), Arranged by J. C. Scherpf. [Being] Op. 56, 1st Series, Op. 57, 2d Series, of "The National Airs of Sweden," arranged as Quadrilles, by John C. Scherpf: 4to 5p --- New York, published at the Music Wareroom 479 Broadway, William Vanderbeek; deposited by W. Vanderbeek, 20 December, 1850.

EMERALD Polka. Arranged for the piano, by Henry Chadwick: 4to 2p --- New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 7 June, 1850.

ETHIOPIAN Popular Melodies; arranged in an easy style for the harp, by T. H. Williams. No. 1. Carry me back; Dearest Mae; Happy are we, darkies so gay: 4to 9p — New York, published by J. F. Brown, 1850; deposited by J. F. Brown, 21 February, 1850.

FILLMORE (Augustus D.) The Song of Steam. Words by Capt. C. W. Cutter. Music composed by Augustus D. Fillmore: 4to 3p — Cincinnati, published by D. Anderson, 1850; deposited by D. Anderson, 9 November, 1850.

The wandering boy; a duett. Words by Henry Kirk White. Music composed by Augustus D. Fillmore: 4to 3p — Cincinnati, published by D. Anderson, 1850; deposited by D. Anderson, 9 November, 1850.

Our old Homestead. Words by Miss Phœbe Carey. Music composed by A. D. Fillmore: 4to 3p — Cincinnati, published by D. Anderson, 1850; deposited by D. Anderson, 9 November, 1850.

The Universal Musician; a new collection of secular and sacred music, designed for musical associations, and social music parties; with a new and comprehensive plan of instruction, embracing the various systems of notation. By A. D. Fillmore: 8vo oblong — Cincinnati, published by D. Anderson, 1850; deposited by A. D. Fillmore, 9 May, 1850.

FITCH (Rev. E. T., D. D.) "Thou art gone home;" or, the two voices. Words by Mrs. Hemans. Music by Rev. Eleazer T. Fitch. 4to 5p --- New York, published by Firth, Pond & Co., 1850 : deposited by Firth, Pond & Co., 7 June 1850.

FOSTER (Stephen C.) The voice of by-gone days. Ballad. Written and composed by Stephen C. Foster : 4to 5p --- New York, published by Firth, Pond & Co., 1850 ; deposited by Firth, Pond & Co., 11 October 1850.

Way down in Ca-i-ro. Written and composed by Stephen C. Foster : 4to 5p --- New York, published by Firth, Pond & Co., 1850 ; deposited by Firth, Pond & Co., 7 June 1850.

Nelly Bly. Words and music by S. C. Foster. Being one of Foster's Ethiopian melodies : 4to 5p --- New York, published by Firth, Pond & Co., 1850 ; deposited by Firth, Pond & Co., 9 April 1850.

Mary loves the Flowers ; Song. Poetry and music by S. C. Foster : 4to --- New York, published by Firth, Pond & Co., 1850 ; deposited by Firth, Pond & Co., 9 February 1850.

Nelly was a Lady. Written and composed by S. C. Foster. Being No. 1, of Foster's Ethiopian melodies : 4to 4p --- New York, published by Firth, Pond & Co., 1850 ; deposited by Firth, Pond & Co., 9 February 1850.

Nelly was a Lady. Written and composed by Stephen C. Foster. Arranged for the Spanish guitar by Max Zorer : 4to 2p --- New York, published by Firth, Pond & Co., 1850 ; deposited by Firth, Pond & Co., 9 February 1850.

Soirée Polka, composed by Stephen C. Foster : 4to 2p --- Baltimore, published by W. C. Peters, 1850 ; deposited by W. C. Peters, 12 February 1850. Another copy deposited 8 March 1850.

Soirée Polka. By S. C. Foster, arranged for four hands. Being No. 23 of W. C. Peters & Co's., selection of admired duetts, &c., for two performers on the piano forte : 4to 5p --- Baltimore, published by W. C. Peters, 1850 ; deposited by W. C. Peters, 16 October 1850.

Dolcy Jones, written and composed by S. C. Foster. Being No. 3, of Foster's Ethiopian Melodies : 4to 4p --- New York, published by Firth, Pond & Co., 1850 ; deposited by Firth, Pond & Co., 9 February 1850.

FOWLER (J. A.) Sharon Polka, composed for the piano forte, by J. A. Fowler : 4to 5p --- New York, published by William Hall & Son, 1850 ; deposited by William Hall & Son, 21 June 1850.

Fire Fly Polka, composed for the piano forte by J. A. Fowler : 4to 5p --- New York, published by William Hall & Son 1850 ; deposited by William Hall & Son, 3 May 1850.

- FRY (Theo.) Sylphide Waltz, in five steps. Composed by Theo. Fry: 4to 5p — Baltimore, published by G. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February 1850.
- FULLGRAFF (Otto) "Sweet thoughts of him around me gather"; or, "the Soldier's Bride." Written by L. M. Montague, composed by Otto Füllgraff: 4to 7p — New York, published at Vanderbeek's, 1850; deposited William Vanderbeek, 4 October 1850.
- GAGE (Le) d'Amour, Valse, arranged for the piano forte, by C. Schaub: 4to 2p — Louisville, Ky., published by Peters & Webb, 1850; deposited by Peters, Webb & Co., 25 May, 1850.
- GANSBACHER (J.) "Regina Coeli." To be sung from Easter until Trinity Eve. From J. Gänsbacher: 4to 2p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 6 August, 1850.
- GERKIN (Charles H.) The Flora Waltz. Composed and arranged for the piano forte, by Charles H. Gerkin: 4to 3p — Baltimore, published by Geo. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February, 1850.
- GIMBER (Henry.) "I watch'd the dew upon the grass;" as sung by Jenny Lind. Written and composed by Henry Gimber: 4to 5p — New York, published by Wm. Vanderbeek; deposited by Wm. Vanderbeek, 4 October, 1850.
- GLIMPSE (A) of love song. Words taken from the Hazel dell Poems. Arranged with symphonies and accompaniments, for the piano forte: 4to 5p — Albany, Boardman & Gray — New York, Firth, Pond & Co.; deposited by Boardman & Gray, 11 October, 1850.
- GLOVER (Charles W.) Gentle Voices; for the Spanish guitar. Composed by Chas. W. Glover. Arranged by Henry Chadwick: 4to 3p — New York, published by Wm. Hall & Son, 1850; deposited by W. Hall & Son, 3 May, 1850.
- Susette and Beau Joe; as sung by Geo. Kunkel, of the Nightingales. Words by T. Martin. Music arranged from Glover, for the piano forte, from "Songs of the Sable Harmonists:" 4to 5p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 16 October, 1850.
- GOOLD (Henry) Memory's Jewels. A song to my wife. Words from the Albany Evening Journal. Music composed by Henry Goold: 4to 3p — New York, published by Firth, Pond & Co., 1850; deposited by Firth & Co., 9 February 1850.
- GRAFULLA (C.S.) "Captain Clark's Quick Step." Composed by C. S. Grafulla: 4to 7p — New York, published by William Hall & Son, 1850; deposited by William Hall & Son, 19 August 1850.
- Friendship Quick Step. Composed by C. S. Grafulla for Phœnix Hook and Ladder co., No. 3: 4to 6p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 7 June 1850.
- Friendship Quickstep. Composed for the Phœnix Hook and Ladder co., No. 3, (of New York) by C. S. Grafulla, 4to

6p --- New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 April 1850.

GRIMMER (J) "Les belles de la cote joyeuse," No. 1 of "Les belles de la Riviere Rouge." Valses en deux suites. Composées par J. Grimmer: 4to 9p --- Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May 1850.

"Les belles des Natchitoches," No. 2 of "Les belles de la Riviere Rouge," Valses en deux suites. Composées par J. Grimmer: 4to 9p --- Louisville, published by Peters, Webb & Co., 25 May 1850.

GROBE (Charles) E. Pluribus Unum; with brilliant variations for the piano forte. Composed by Charles Grobe: 4to 8p --- Baltimore, published by William C. Peters, 1850; deposited by William C. Peters, 22 April 1850.

Gage d'Amitié; Variations brillantes, sur le theme favori, The Elfin Waltz, composées pour le piano par Charles Grobe: 4to 9p --- Baltimore, published by G. Willig, Jr., 1850: deposited by G. Willig, Jr., 21 February 1850.

GRUBE (Charles.) Georgia Waltz. Composed by Charles Grube: 4to 5p --- New York, published by William Hall & Son, 1850; deposited by William Hall & Son., 3 May 1850.

GUENTZ (A. Ch.) Impromptu Capricieux. Composé pour le piano par A. Ch. Guentz: 4to 7p --- Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May 1850.

GUIBERT (Benjamin J.) Le lac d'amour valse, composée pour le piano. Par Benjamin J. Guibert: 4to 3p --- Louisville, published by Peters & Webb, 1850; deposited by Peters & Webb, 25 May, 1850.

La belle Lucie. Favorite Waltz for the Piano. Composed by Benjamin J. Guibert: 4to 5p --- Louisville, published by H. J. Peters & Co., 1850., deposited by H. J. Peters 25 May 1850.

GUNG'L (Josef) "Narragansett Waltz;" No. 3 of Musical compositions of Josef Gung'l 4to 9p --- New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 7 June 1850.

Wandering Melodies Waltzes. Being No. 2 of the musical compositions of Josef Gung'l: 4to 11p --- New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 April 1850.

GUNN (Isaac.) Mary Machree. Written by Miss Fanny Malone Raymond. Composed by Isaac Gunn: 4to 5p --- New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 7 June, 1850.

GUNTER (E. W.) There's a nook in the greenwood; ballad, written by F. Cosby, Esq. Composed and arranged for the piano forte, by E. W. Gunter: 4to 5p --- Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 5 October, 1850.

- GUNTER (E. W.) The School Queen ; a coronation Song. Words by Rev. B. B. Smith. Music composed and arranged for the piano forte, by E. W. Gunter : 4to 3p — Louisville, published by H. J. Peters & Co., 1850 ; deposited by H. J. Peters & Co., 25 May, 1850.
- “HAD I never, never known thee ;” ballad. Arranged for the piano, by William Cumming : 4to 5p — Louisville, published by Peters, Webb & Co., 1850 ; deposited by Peters, Webb & Co., 25 May, 1850.
- “Had I never, never known Thee ;” Ballad. Arranged for the guitar, by Wm. Cumming : 4to 5p — Louisville, published by Peters, Webb & Co., 1850 ; deposited by Peters, Webb & Co., 25 May, 1850.
- HANCE (J. F.) Presentation Quick Step. Composed by J. F. Hance : 4to 5p — Baltimore, published by W. C. Peters, 1850 ; deposited by W. C. Peters, 22 April, 1850.
- HARADEN (D. T.) The Enchanted Polka. Composed for the piano forte, by D. T. Haraden : 4to 5p — Boston, published by A. & J. P. Ordway, 1850 ; deposited by A. & J. P. Ordway, 19 October, 1850.
- HARRINGTON (G. A.) Oh Phœbe. An Ethiopian Ballad. Written by a gentlemen of Baltimore. Composed by G. A. Harrington ; 4to 5p --- Baltimore, published by G. Willig, Jr., 1850 ; deposited by G. Willig, Jr., 21 February 1850.
- HARRY and LUCY. “What shall this Darkey do.” An Ethiopian Melody. Written and composed by Harry and Lucy : 4to 5p --- New York, published by W. Hall & Son, 1850 ; deposited by W. Hall & Son, 3 March 1850.
- HATTON (J. L.) Unkindness. Ballad, composed for, and sung by Eliza Biscaccianti ; to whom it is dedicated by J. L. Hatton : 4to 6p --- Louisville, published by Peters, Webb & Co., 1850 ; deposited by Peters, Webb & Co., 5 October 1850.
- HENNINGS (John B.) The War Steed. Grand Military March. Composed by John B. Hennings : 4to 5p --- New York, published by Firth Pond & Co., 1850 ; deposited by Firth, Pond & Co., 7 June 1850.
- HENRI Quadrille impromptu, sur les Chansons populaires, Jeannette and Jeannot, Love’s Serenade, Bowl’d Soger Boy, &c., pour le piano par Henri : 4to 6p --- New York, published by Jaques & Brother, 1850 ; deposited by Jaques & Brother, 22 March 1850.
- “HENRIETTA Gallopade.” Arranged for the piano by H. J. Peters : 4to 5p --- Louisville, published by Peters, Webb & Co., 1850 ; deposited by Peters, Webb & Co., 25 May 1850.
- HENSSLER (F. R.) Chamois Polka. Composed for the piano forte by F. R. Henssler : 4to 6p --- Boston, published by A. & J. P. Ordway ; deposited by A. & J. P. Ordway, 19 October 1850.
- “HERE’S a health to thee, Tom Moore.” A favorite song, by Lord Byron ; arranged for the guitar, by William Iucho : 4to 5p —

Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May 1850.

HERZ (Henri) The Flower of America, Waltz, (being No. 2 of Cottage Duetts,) composed by Henri Herz: 4to 2p — Baltimore, published by G. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February 1850.

The Pilgrimage; melody by Herz: words from the Message Bird: symphonies and accompaniments, by P. Y. Densari: 4to 2p — New York, published by S. Pearson, 1850; deposited by Sidney Pearson, 11 October 1850.

Hess (Charles.) The Thalia Schottisch. Composed by Chas. Hess: 4to 2p — New-York, published at Vanderbeek's, 1850; deposited by Wm. Vanderbeek, 4 October, 1850.

HEWITT (J. H.) "Let us hope for the best;" Ballad, written and composed by J. H. Hewitt: 4to 5p — New York, published by Wm. Hall & Son, 1850; deposited by W. Hall & Son, 19 August, 1850.

"The single man;" a comic Song. Written and adapted by J. H. Hewitt: 4to 5p — New York, published by Wm. Hall & Son, 1850; deposited by Wm. Hall & Son, 19 August, 1850.

Leap o'er the waves; song of the Buccaneer. Written, partly composed by J. H. Hewitt; 4to 5p — Baltimore, published by G. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February, 1850.

HINE (Charles.) Prairie Song. Written and composed by Charles Hine: 4to 2p — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 5 October, 1850.

HODSON (C. A.) He reached the valley; ballad. Music by C. A. Hodson. Arranged for the guitar, by E. Blessner: 4to — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 February, 1850.

HOFFMAN (G. R.) Queen of my soul, as a waltz. Composed and arranged for the piano forte, by G. R. Hoffman: 4to 3p — Louisville, Ky., published by Peters, Webb & Co.; deposited by Peters, Webb & Co., 5 October, 1850.

HOFFMAN (Richard.) Grande Fantaisie on the celebrated air, "Here's to you, Harry Clay." Composed by Richard Hoffman: 4to 13p — New York, published by Firth, Pond & Co., 1850; deposited by R. Hoffman, 7 June, 1850.

HOLMES (A. F.) Speed, speed, my fleet Vessel. Words by F. H. B. Music composed by A. F. Holmes: 4to 5p — Boston, published by A. & J. P. Ordway, 1850; deposited by A. & J. P. Ordway, 19 October, 1850.

HOME (A) and Friends around us; song, arranged for the piano forte, by Wm. Tillinghast: 4to 3p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 11 October, 1850.

HOWARD (Mrs. Charles.) Look from thy lattice, gentle Lady; a Serenade,

written and adapted by J. H. Hewitt. Dedicated to Mrs. John F. Fry, by Mrs. Chas. Howard.

HOWARD (Frank.) Quadrilles sociales. Composed and arranged for the piano forte, by Frank Howard: 4to 7p — Boston, published by A. & J. P. Ordway, 1850; deposited by A. & J. P. Ordway, 19 October, 1850.

I'd offer thee this hand of mine. Arranged for the piano forte by L. T. Chadwick; as a Quartette with an accompaniment for the piano, by W. Tillinghast: New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 7 June 1850.

"I'll Cling to thee." Words by Mrs. S. R. Thorpe. Arranged for the piano forte by H. J. Peters: 4to 2p — Louisville, published by H. J. Peters & Co., 1850; deposited by H. J. Peters & Co., 25 May 1850.

"I love to look in those dreamy eyes;" written by F. Cosby; subject from Reissiger. Arranged for the piano forte by E. W. Gunter: 4to 7p — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May 1850.

IOLAH Waltzes: composed and arranged for the piano forte, by a lady of South Carolina. Containing Nos. 1, 2, 3, 4 and 5: 4to 7p — New York, published by William Hall & Son., 1850; deposited by H. H. Shultz, 2 March 1850.

"I seen her at the window." No. 2 of songs of the Sable Harmonists, as sung by Kneass' Opera Troupe. Arranged for the piano forte: 4to 5p — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May 1850.

IUCHO (William) "Adah." No 3 of "The Fairy Polka Rondos." A collection of useful and agreeable pieces for the piano forte. composed by William Iucho: 4to 5p — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May 1850.

California March. Composed for the piano forte by William Iucho: 4to 5p — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters Webb & Co., 25 May 1850.

La Latona; valse brillante. Composed by William Iucho. 4to — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May 1850.

"Titania." No. 2 of "The Fairy Polka Rondos." A collection of useful and agreeable pieces for the piano forte. Composed by William Iucho: 4to 5p — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May 1850.

JACOBSEN (Otto F.) Warren Polka. Composed by Otto F. Jacobsen: 4to 5p — New York, published by William Hall & Son, 1850; deposited by William Hall & Son, 3 May 1850.

"JALAPA GALS;" being No. 2 of "Songs of the Sable Harmonists. (piano): 4to — Louisville, published by Peters, Webb & Co.; deposited by Peters, Webb & Co., 25 May 1850.

JENNY Lind's Dream. Valse brillante. Arranged for the piano forte by

Miss Augusta Browne: 4to 3p — Boston, published by A. & J. P. Ordway, 1850; deposited by A. & J. P. Ordway, 19 October 1850.

JENNY Lind's favorite serenading Polka; or, the National Schottisch. Arranged by H. P. Weller: 4to 2p — Baltimore, published by William C. Peters, 1850; deposited by William C. Peters, 16 October 1850.

JONES (Edward P.) Guadalquiver Quick Step, introducing the popular airs: "True Love can ne'er forget," and "On the Banks of Guadalquiver." Composed by Edward P. Jones: 4to 4p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 February 1850.

The Return Waltzes. Composed by Edward P. Jones: 4to 9p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 February 1850.

KELLER (Mathias) Pit and Pat. A favorite Song. Sung by Rose Merrifield. Words written and inscribed to Mad. Albertine by Henry H. Paul. Music by Matthias Keller: 4to 5p — Philadelphia, published by M. Keller & J. Neff, 1850; deposited by M. Keller & J. Neff, 8 October 1850.

"Whene'er I see those smiling eyes." Words by Thomas Moore. Composed and respectfully dedicated to Jenny Lind by Mathias Keller: 4to 5p — Philadelphia, published by M. Keller & J. Neff; deposited by M. Keller & J. Neff, 8 October 1850.

Little Rose. A favorite ballad. Sung by Rose Merrifield. Written by Henry H. Paul. Music by Mathias Keller: 4to 5p — Philadelphia, published by M. Keller & J. Neff; deposited by M. Keller & J. Neff, 8 October 1850.

Albertine Polka, as danced by M^{lle}. Albertine and Mr. Wood at the Arch Street Theatre. Composed for the piano by Mathias Keller: 4to 2p — Philadelphia, published by M. Keller & J. Neff; deposited by M. Keller & J. Neff, 8 October 1850.

Song for the Union. Poetry by Freeman Scott. Composed for one or four voices, with the accompaniment of the piano forte by Mathias Keller 4to 15p — Philadelphia, published by M. Keller & J. Neff; deposited by M. Keller & J. Neff, 8 October 1850.

American Liberty; a song national and patriotic by Freeman Scott, for one or four voices, with an accompaniment for the piano forte by Mathias Keller: 4to 5p — Philadelphia, published by M. Keller & J. Neff; deposited by M. Keller & J. Neff, 8 October 1850.

Flow on thou shining river; a favorite song. Words by Thomas Moore, music by Thomas Keller: 4to 5p — Philadelphia, published by M. Keller & J. Neff, 1850; deposited by M. Keller & J. Neff, October 8, 1850.

"My husband is such a queer fellow;" a favorite comic song. Written by Henry H. Paul, music by Mathias Kel-

ler : 4to 5p — Philadelphia, published by M. Keller & J. Neff, 1850; deposited by M. Keller & J. Neff, 8 October, 1850.

KELLER (Mathias) Freedom's Flag; patriotic song. Written and respectfully dedicated to Senator Foote, by Robert Jones; music by Mathias Keller : 4to 5p — Philadelphia, published by M. Keller & J. Neff; deposited by M. Keller & J. Neff, 8 October 1850.

Love's Messenger; a favorite song. Words from the German; sung by Philip Rohr, at Barnum's. Music composed by M. Keller : 4to 2p — Philadelphia, published by M. Keller & J. Neff; deposited by M. Keller & J. Neff, 8 October 1850.

I live for thee only. Ballad. Words by A. Spencer, music by Mathias Keller : 4to 5p — Philadelphia, published by M. Keller & J. Neff; deposited by M. Keller & J. Neff, 8 October 1850.

KENNEDY (Joseph.) Progressive lessons for the Flute; comprising many of the choicest and most popular melodies, arranged with a second on the same staff, by Jas Kennedy : 4to 8p — Philadelphia, published by the Author, 17 S. Fifth street; deposited by J. Kennedy, 23 July, 1850.

KIELBLOCK (Francis.) Come back, day-dreams, come back; Song. Composed by Francis Kielblock : 4to 2p — Baltimore, published by G. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February, 1850.

KING (Frances I.) O, come, smiling June. Written by Wm. B. Patten. Composed by Frances I. King : 4to 2p — S. Pearson, 78 Bleeker street, New York; deposited 30 December, 1850.

KINGSLEY (George.) The Sacred Harmonist; a new collection of church music. Edited by George Kingsley : 8vo long — New York, published by A. S. Barnes & Co., 1850; deposited by A. S. Barnes & Co., 1 February, 1850.

KIRSCHENHEUTER (J.) Sue Polka. Composed and arranged for the piano forte, by J. Kirschenheuter : 4to 2p — Louisville, Ky., published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May, 1850.

Spring Blossom Polka. Composed and arranged for the piano forte, by J. Kirschenheuter : 4to 5p — Louisville, Ky., published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May, 1850.

KNEASS (Nelson.) "Julia am a Beauty;" being No. 1 of "Songs of the Sable Harmonists;" piano. Written and composed by Nelson Kneass : 4to 5p — Louisville, published by W. C. Peters & Co., 1850; deposited by W. C. Peters, 25 May, 1850.

KNEASS (N.) Katy Dean. Written and composed by N. Kneass, being No. 9 of "Melodies of the New Orleans Serenaders' Operatic Troupe : 4to 4p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 April 1850.

Ben Bolt : or, Oh! don't you remember; Ballad. Composed by Nelson Kneass; Second Edition : 4to 5p — Baltimore,

published by W. C. Peters, 1850 ; deposited by W. C. Peters, 18 January 1850.

Ben Bolt. Chant favori de Kneass. Varie pour le piano par Charles Grobe : 4to 7p — Baltimore, published by W. C. Peters, 1850 ; deposited by W. C. Peters, 8 March, 1850.

The Old Veteran. Words by T. H. Bayley, Esq. Composed by Nelson Kneass : 4to 5p — Louisville, published by W. C. Peters & Co., 1850 ; deposited by W. C. Peters & Co., 18 January, 1850.

KNIGHT (Joseph Philip) I miss thee from my side, beloved. Ballad, by Geo. P. Morris, Esq. The Music composed by Joseph Philip Knight : 4to 6p — New York, published by Firth, Pond & Co., 1850 ; deposited by Firth, Pond & Co., 9 February 1850.

KROLLMANN (Gustave) "Sweet home Polka." Composed for the piano forte by G. Krollmann : 4to 5p — Louisville, published by Peters, Webb & Co., 1850 ; deposited by Peters, Webb & Co., 25 May 1850.

"**LADIES**, wont you marry?" being No. 4 of "Songs of the Sable Harmonists;" piano : 4to 5p — Louisville, published by Peters, Webb & Co., 1850 ; deposited by Peters, Webb & Co., 25 May 1850.

LA HACHE (Theod. Von) Woodman Spare that Tree. Polka. Composed for the piano forte, by Theod. Von La Hache : 4to 3p — New York, published by Firth, Pond & Co., 1850 ; deposited by Firth, Pond & Co., 11 October 1850.

LA POLKA (Linda) Being No 1 of Gems from the Operas. Arranged for the harp by T. H. Williams : 4to 8p — New York, published by J. F. Browne, 1850 ; deposited by J. F. Browne, 21 February 1850.

LAURENCE (S.) Song of the Snow. Words by the "Poor Scholar." Music by S. Laurence : 4to 5p — New York, published by William Hall & Son, 1850 ; deposited by William Hall & Son, 3 May 1850.

LEACH (S. W.) "The day we two were wedded," a long time ago. A ballad. Poetry by Theo. Woodward, Esq. Composed by S. W. Leach : 4to 5p — New York, published by William Hall & Son, 1850 ; deposited by William Hall & Son, 21 June 1850.

LEE (Alexander) "I am dreaming of thee Napolitaine." Sung by Miss Andrews ; guitar. Composed by Alexander Lee. Arranged by G. F. Francis : 4to 3p — Louisville, published by Peters, Webb & Co.; deposited by Peters, Webb & Co., 25 May 1850.

LENSCHOW (Charles) Wedding Polka. Composed by Charles Lenschow. Opus 20 : 4to 5p --- published by W. C. Peters, 1850 ; deposited by W. C. Peters, 22 April, 1850.

Kossuth March. Composed by C. Lenschow. Being No. 3 of Cottage Duetts. Arranged by J. E. Müller : 4to 2p --- Baltimore, published by G. Willig, Jr., 1850 ; deposited by G. Willig, Jr., 21 February 1850.

LENSCHOW (C.) Kossuth March. Composed by C. Lenschow : 4to 5p --- Baltimore, published by G. Willig, Jr., 1850 ; deposited by G. Willig, Jr., 21 February 1850.

Betty Polka. Composée par C. Lenschow, et variée pour le piano forte, par Charles Grobe : 4to 11p — Baltimore, published by G. Willig, Jr., 1850 ; deposited by G. Willig, Jr., 21 February, 1850.

The Rose ; song, translated from the German, by the Rev. Chas. T. Brooks. Composed by C. Lenschow : 4to 2p — Baltimore, published by G. Willig, Jr., 1850 ; deposited by G. Willig, Jr., 21 February, 1850.

Cradle Song. Translated from the German, by the Rev. Chas. T. Brooks. Composed by C. Lenschow ; Op. 17 : 4to 2p — Baltimore, published by G. Willig, Jr., 1850 ; deposited by G. Willig, Jr., 21 February, 1850.

Sailor's Polka. Composed by C. Lenschow : 4to 3p — Baltimore, published by G. Willig, Jr., 1850 ; deposited by G. Willig, Jr., 21 February, 1850.

Sehnsucht nach der Heimath ; the Hungarian song of Home. Words translated from the German, by Rev. Chas. T. Brooks. Composed by Chas. Lenschow : 4to 8p — Baltimore, published by W. C. Peters, 1850 ; deposited by W. C. Peters, 24 January, 1850.

LE ROY (Edward.) The celebrated Robin Ruff Quick-step. Composed by Edward Le Roy : 4to 3p — New York, published by Firth, Pond & Co., 1850 ; deposited by Firth, Pond & Co., 7 June, 1850.

LISZT's Hungarian March ; as performed at the concerts of the Steyermarschische Company. Arranged for the piano forte, by H. J. Peters : 4to 5p — Louisville, published by Peters & Webb, 1850 ; deposited by Peters & Webb, 25 May, 1850.

LÖPKE (C. A.) Violet Waltz. In five steps ; composed by C. A. Löpke : 4to 5p — Baltimore, published by George Willig, Jr. ; deposited by George Willig, Jr., 21 February 1850.

LORENZ (Carl) The Wild Flower Waltz, by Carl Lorenz : 4to 2p — New York, published by Firth, Pond & Co., 1850 ; deposited by Firth, Pond & Co., 11 October, 1850.

Juliet Polka, by Carl Lorenz : 4to 5p — New York, published by Firth, Pond & Co., 1850 ; deposited by Firth, Pond & Co., 9 February 1850.

The Empire Waltz, by Carl Lorenz 4to 2p — New York, published by Firth, Pond & Co., 1850 ; deposited by Firth, Pond & Co., 11 October 1850.

LOUISIANA Belle ; Chant favori, varié pour le piano, par Charles Grobe : 4to 5p — Baltimore, published by W. C. Peters, 1850 ; deposited by W. C. Peters, 6 August, 1850.

LYNCH (F.) The Negro's Departure ; or, Dinah Brown. Words by T. B. Prendergast. Melody by F. Lynch ; arranged for the piano by

J. P. Ordway: 4to 5p — Boston, published by A. & J. P. Ordway, 1850; deposited by A. & J. P. Ordway, 19 October 1850.

LYON (D. J.) "Forget me not." Ballad. (Piano); written and composed by D. J. Lyon: 4to 5p — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May 1850.

The day, oh! the daylight for me;" answer to the "Night, oh! the Night for me." Written and adapted to a German melody by D. J. Lyons: 4to 5p — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May, 1850.

Same arranged for Guitar.

M'KENNA (J. Theod.) Manor Waltz. Composed by J. Theod. M'Kenna. Opus 19: 4to 2p — Baltimore, published by G. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February, 1850.

The Donna Bella Polka. Composed by J. T. M'Kenna: 4to 3p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 22 April, 1850.

MANGOLD (C. A.) The Bird and the Maiden; as sung by Mad'lle. Jenny Lind. Composed by C. A. Mangold: 4to 7p — New York, published by S. C. Jollie, 1850; deposited by S. C. Jollie, 11 October, 1850.

MARSHALL (L.) The old Timepiece on the Stairs; Quartette. Poetry by Longfellow. Composed by L. Marshall: 4to 2p — published by A. & J. P. Ordway, Boston, 1850; deposited by A. & J. P. Ordway, 19 October, 1850.

MARTINEZ (Antonio C.) Souvenir de Manhasset Schottische pour Piano, par Antonio C. Martinez: 4to 3p — S. Pearson, 78 Bleecker street, New York; deposited by Sidney Pearson, 30 December, 1850.

MASON (Henry.) The Picciola Polka. By Henry Mason: 4to 5p — published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 11 October, 1850.

MAY (A.) Minerva Waltz. Composed and arranged for the piano forte, by A. May: 4to 2p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 16 October, 1850.

MAY (D. M. H.) In far distant Lands. Written by John Jones. Composed and arranged for the piano forte, by D. M. H. May: 4to 2p — Baltimore, published by G. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February, 1850.

MAYHEW (Frederick A.) The Cadet March. Composed by Frederick A. Mayhew: 4to 3p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 11 October, 1850.

MELICHAR (Osw. Em.) Cordelia Polka. Composed by Osw. Em. Melichar: 4to 5p — New York, published by W. Hall & Son, 1850; deposited by Wm. Hall & Son, 21 June, 1850.

MELODIE Irlandaise. "Come o'er the sea, maiden, with me." Transcrite pour piano forte, par W. Vincent Wallace. Op. 53: 4to 6p —

New York, published by Wm. Hall & Son, 1850 ; deposited by Wm. Hall & Son, 19 August, 1850.

MESSEMER (J.) *La Belle de Louisville* ; Polka, arranged for the piano forte, by J. Messemer : 4to 2p — published by H. J. Peters & Co., Louisville, Ky., 1850 ; deposited by H. J. Peters & Co., 25 May, 1850.

Taylor's Grand March. Composed for the piano forte, by J. Messemer : 4to 2p — Louisville, published by H. J. Peters & Co., 1850 ; deposited by H. J. Peters & Co., 25 May, 1850.

Falls City Gallopade. Composed and arranged for the piano, by J. Messemer : 4to 2p — Louisville, published by Peters, Webb & Co., 1850 ; deposited by H. J. Peters, 25 May, 1850.

MEYERBEER. *The Hermit and the Maiden* ; *Quando Lasciai la Normandie Roberto il Diavolo.* Sung by Jenny Lind, composed by Meyerbeer : 4to 6p — New York, published by S. C. Jollie, 1850 ; deposited by S. C. Jollie, 11 October, 1850.

"Robert ! Robert ! thou whom I love," (Robert ! Robert ! toi que j'aime ;) *Cavatina.* English translation by W. Henry Morris. As sung by Mrs. Laura A. Jones. Robert le Diable, by Meyerbeer : 4to 9p — New York, published by Wm. Hall & Son, 1850 ; deposited by W. Hall & Son, 19 August, 1850.

MIGUEL (M.) *Farewell to School* ; Song or Trio. Written by Geo. D. Prentice. Music composed and arranged by M. Miguel : 4to 6p — Louisville, Ky., published by Peters, Webb & Co., 1850 ; deposited by Peters, Webb & Co., 5 October, 1850.

MIRUS (Hermann.) *Cynthiana Polka.* Composed by Hermann Mirus : 4to 2p — Louisville, Ky., published by Peters, Webb & Co., 1850 ; deposited by Peters, Webb & Co., 5 October, 1850.

MOLT's (T. F.) *fifty-one practical Lessons for first beginners on the Piano Forte* ; consisting of finger exercises, easy rythmical excrcises and popular airs. Arranged in strict progressive order, and fingered for small hands : 4to 20p — New-York, published by Firth, Pond & Co., 1850 ; deposited by T. F. Molt, 11 October, 1850.

MORRA (Sig'r. J.) *Ladies' Military Polka.* Composed by Sig'r. J. Morra : 4to 2p — Baltimore, published by W. C. Peters, 1850 ; deposited by W. C. Peters, 12 February, 1850.

MORRIS Polka, as performed by Dodworth's Cornet Band. Arranged for the piano, and dedicated to Morris, by his sister, Caroline Burnton : 4to 4p — New York, published by Jaques & Brother, 1850 ; deposited by Jaques & Brother, 13 April, 1850.

MOUNTAIN *Home Quick-step* : No. 46 of the *Flowers of Youth* : a collection of favorite airs. Arranged in an easy manner for four hands : 4to 5p — New York, published by Wm. Hall & Son, 1850 ; deposited by W. Hall & Son, 19 August, 1850.

MOZART (W. A.) *Fear not, fond youth* ; "Non paventar ;" "O, zittre nicht." Grand aria, sung by Mad'lle. Jenny Lind, in the opera, *Il Flauto Magico.* Composed by W. A. Mozart : 4to 7p —

New York, published at Vanderbeek's, 1850; deposited by Wm. Vanderbeek, 4 October, 1850.

MULLER (W.) "I give thee back thy plighted Vow;" Ballad. Words by Wm. W. Scrugham, Esq.: to whom the music is most respectfully dedicated, by his friend, W. Müller: 4to 5p — New York, published by W. Hall & Son, 1850; deposited by W. Hall & Son, 19 August, 1850.

Hearts and Homes; Polka. Composed by W. Müller: 4to 5p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 7 June, 1850.

MULLER (J. E.) Susannah Polka. Composed for the piano forte, by J. E. Müller: 4to 2p — Baltimore, published by G. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February, 1850.

Soldier's Delight Quick-step. Composed by J. E. Müller: 4to 2p — Baltimore, published by G. Willig, Jr., 21 February, 1850.

The merry Sleigh-ride; Gallopade, by Julius E. Müller: 4to 8p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 22 April, 1850.

Margaret's Waltz. Composed by Julius E. Müller: 4to 2p — Baltimore, published by G. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February, 1850.

Omnibus Gallopade. Composed by J. E. Müller: 4to 2p — Baltimore, published by G. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February, 1850.

MUNCK (Johann.) Die Blumenstrauss, or Bouquet Schottisch Polka. Composed for the piano, by Johann Munck: 4to 4p — New York, published by Jaques & Brother, 1850; deposited by Jaques & Brother, 6 June, 1850.

NASH (J. P.) "All around and all above thee," or "Maiden fair." Words by F. Cosby, Esq. Melody by J. P. Nash. Arranged for the piano forte, by H. J. Peters: 4to 5p — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters & Webb, 25 May, 1850.

NEW Mary Blane Polka. Arranged for the piano forte; 4to 2p — New York, published, by Wm. Hall & Son, 1850; deposited by W. Hall & Son, 3 May, 1850.

"NOT Forsaken;" Song. Words by Prof. N. Butler—Theme de Rosellen "La Tremolo." Arranged for the piano forte, by H. J. Peters: 4to 7p — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May, 1850.

OAKLEY (Wm. H.) The Alleghanians' Boat Glee, by Wm. H. Oakley. (Being No. 12 of the Alleghanians' Songs, Duetts, Glees, &c.) Arranged for the piano forte: 4to 5p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 February, 1850.

OH! carry me back to Old Virginny, as sung by the Christy Minstrels. Arranged for the guitar, by Henry Chadwick: 4to 2p — New

York, published by Firth, Pond & Co., 1850 ; deposited by Firth, Pond & Co., 7 June, 1850.

OH ! Dinah, take this hand. Words written, and music arranged by T. J. Sweet : 4to 5p — New York, published by Firth Pond & Co., 1850 ; deposited by Firth, Pond & Co., 11 October, 1850.

OLIVER (E. B.) The Exile's Welcome. Maria Festiva ; (March.) Composed for the piano, by E. B. Oliver : 4to 5p — Boston, published by A. & J. P. Ordway, 1850 ; deposited by A. & J. P. Ordway, 19 October, 1850.

OPL (J. K.) "Orphan's Lament." Words by Melodia. Music composed by J. R. Opl : 4to 5p, Louisville, published by Peters, Webb & Co., 1850 ; deposited by Peters, Webb & Co., 25 May, 1850.

ORDWAY (J. P.) Welcome, sweet bird of song. Poetry and music composed by J. P. Ordway, and inscribed to Jenny Lind, on her first visit to Boston : 4to 5p — Boston, published by A. & J. P. Ordway, 1850 ; deposited by A. & J. P. Ordway, 19 October, 1850.

The Crystal Polka. Composed for the piano forte, by J. P. Ordway : 4to 5p — Boston, published by A. & J. P. Ordway, 1850 ; deposited by A. & J. P. Ordway, 19 October, 1850.

Sweet Nelly Brown. Words and music composed for the piano, by John P. Ordway : 4to 5p — Boston, published by A. & J. P. Ordway, 1850 ; deposited by A. & J. P. Ordway, 19 October, 1850.

Old Sam Grid-iron. Words by Sam's uncle. Music composed and arranged by J. P. Ordway : 4to 5p — Boston, published by A. & J. P. Ordway, 1850 ; deposited by A. & J. P. Ordway, 19 October, 1850.

Affection's Laurel Wreath, or, Sympathy. Words and music composed for the piano forte, by J. P. Ordway : 4to 5p — Boston, published by A. & J. Ordway, 1850 ; deposited by A. & J. P. Ordway, 19 October, 1850.

"Music fills my soul with sadness." Words by P. Gilmore. Music composed for the piano, by J. P. Ordway : 4to 5p — Boston, published by A. & J. P. Ordway, 1850 ; deposited by A. & J. P. Ordway, 19 October, 1850.

The death of Gen. Taylor. Sung by Ossian E. Dodge, Esq. Poetry and Music composed by John P. Ordway : 4to 5p — Boston, published by A. & J. P. Ordway, 1850 ; deposited by A. & J. P. Ordway, 19 October, 1850.

OTTO (F.) Sunset on the Sea. The poetry by Charles P. Shiras, Esq. Adapted to melody by F. Otto. Arranged for the piano, by Charles Grobe : 4to 3p — Baltimore, published by G. Willig, Jr., 1850 ; deposited by G. Willig, Jr., 21 February, 1850.

P. (E. H.) Le premier début Valse, par E. H. P. : 4to 2p — E. Pearson, 78 Bleeker street, New York ; deposited by Sidney Pearson, 30 December, 1850.

PALFREY (George.) Lottie Waltz. Composed and arranged for the piano forte, by George Palfrey : 4to 2p — New York, published by

Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 February, 1850.

PEARSON (S.) "Longings for the Spring time." Written by W. A. C. Music composed and arranged by Sidney Pearson — New York, published by S. Pearson, 1850; deposited by Sidney Pearson, 7 June, 1850.

PENDLETON (Mrs. Ed. H.) Farewell to the Land where the heart-tide is Springing, or the M'Ivor's Farewell. Arranged as a Duett. Composed by Mrs. Ed. H. Pendleton: 4to 2p — Baltimore, published by W. C. Peters, 1850, deposited by W. C. Peters, 16 October, 1850.

PENOT (A.) La Pyrenenne; the new Quadrille. The figures invented by Mons. Zaryshowki. Music composed by A. Penot; 4to 5p — New York, published by Wm. Hall & Son, 1850; deposited by Wm. Hall & Son, 3 May, 1850.

PETERS (W. C.) Jessie of Glengyle. Words by W. H. Donoho, Esq. Music by W. C. Peters; (Piano): 4to 5p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 16 October, 1850.

"We stood beside the window." Chant favori de W. C. Peters. Varié pour le piano, par Chas. Grobe: 4to 7p — Baltimore, published by W. C. Peters; deposited by W. C. Peters, 6 May, 1850.

"Cincinnati Hop Waltz;" being No. 1 of the Flowers of Youth. Arranged for four hands, by W. C. Rayner. Composed by W. C. Peters: 4to 5p — New York, published by Wm. Hall & Son, 1850; deposited by Wm. Hall & Son, 3 May, 1850.

Sing, and remember me; Ballad. Written by J. H. Hewitt. Music composed by W. C. Peters: 4to 5p — Baltimore, published by G. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February, 1850.

PFISTER (A. S.) Irene Waltz. Composed by A. S. Pfister: 4to 3p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 11 October, 1850.

PHILIPPI (M.) The Twilight Waltzes. Composed by M. Philippi: 4to 9p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 7 June, 1850.

A Rose without a Thorn; Polka. Composed by M. Philippi: 4to 5p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 February, 1850.

PHILLIPS (Austin.) "The hero who dares, is the hero who wins." Sung at the grand complimentary ball given in honor of Major General Zachary Taylor, on the 5th of February, 1850. Words by Chas. D. Stewart, Esq. Music by Austin Phillips: 4to 5p — New York, W. Hall & Son, 1850; deposited by W. Hall & Son, 19 August, 1850.

"The dearest name;" Duett, for soprano and tenor voices. Composed by A. Phillips: 4to 5p — New York, pub-

lished by Wm. Hall & Son ; deposited by Wm. Hall & Son, 21 June, 1850.

PIKE (Marshall S.) Happy are we to-night. Words and music by Marshall S. Pike, Esq. Arranged for the piano, by J. P. Ordway : 4to 5p — Boston, published by A. & J. P. Ordway, 1850 ; deposited by A. & J. P. Ordway, 19 October, 1850.

Home again. Words and music by Marshall S. Pike, Esq. Arranged for the piano, by J. P. Ordway : 4to 5p — Boston, published by A. & J. P. Ordway ; deposited by A. & J. P. Ordway, 19 October, 1850.

The Indian warrior's grave. Poetry and music by Marshall S. Pike, Esq. Arranged for the piano, by J. P. Ordway : 4to 5p — Boston, published by A. & J. P. Ordway ; deposited by A. & J. P. Ordway, 19 October, 1850.

“**PIRATES'** Chorus ;” from the Enchantress. Arranged, with variations for the piano forte, by Anthony Reiff, Jr. : 4to 7p — New York, published by Wm. Hall & Son, 1850 ; deposited by Hall & Son, 19 August, 1850.

PLAY (The) of life Polka. Arranged for the piano forte, by Chas. Grobe ; Opus 140 : 4to 5p — Baltimore, published by G. Willig, Jr., 1850 ; deposited by G. Willig, Jr., 21 February, 1850.

PLEASANT Summer days (The) ; Subject from a German Melody. Arranged for the piano forte, by J. F. Wahl : 4to 3p — Louisville, Ky., published by Peters, Webb & Co. ; deposited by Peters, Webb & Co., 5 October, 1850.

POULTON (Geo. R.) Beautiful May ; Song. Composed by Geo. R. Poulton : 4to 5p — New York, published by Wm. Hall & Son, 1850 ; deposited by Wm. Hall & Son, 3 May, 1850.

PRENTICE (Mrs. Geo. D.) “ Would I were with thee ;” Ballad. Written by Hon. Mrs. Norton. Music composed by Mrs. Geo. D. Prentice. Arranged for the guitar, by G. F. Francis : 4to — Louisville, published by Peters, Webb & Co., 1850 ; deposited by Peters, Webb & Co., 25 May, 1850.

Same, arranged for piano.

REISSIGER. Sweet morn of life ; Song. Music by Reissiger. Words and arrangement by Henri : 4to 7p — New York, published by Jaques & Brother ; deposited by Jaques & Brother, 6 June, 1850.

RENAUSY. New Scottish Dance, as taught by Mademoiselle Pauline Desjardins. Music composed by Renausy. Arranged for the piano forte, by Henri : 4to 3p — New York, published by Jaques & Brother, 1850 ; deposited by Jaques & Brother, 13 April, 1850.

ROSA LEE ; being No. 4 of Cottage Duetts. Arranged by J. E. Müller : 4to 2p — Baltimore, published by G. Willig, Jr., 1850 ; deposited by G. Willig, Jr., 21 February, 1850.

ROSE of Tralee. Arranged for the guitar, by B. F. Francis : 4to 2p — Louisville, published by Peters, Webb & Co., 1850 ; deposited by Peters, Webb & Co., 25 May, 1850.

ROSIGNOL Polka (The). Arranged for the guitar, by Mrs. Knoop: 4to 2p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 6 August, 1850.

ROWAN Tree (The). A favorite Scotch Ballad; as sung by Mr. Duffield. Arranged for one or two voices, by W. C. Peters, with guitar accompaniments: 4to 2p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 6 August, 1850.

RUSSELL (B. A.) Elfin Polka. Composed and arranged for the piano forte, by B. A. Russell: 4to 2p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 February, 1850.

RZIHA (Francis.) The American National Boquet; a set of brilliant waltzes, composed by Francis Rziha; 4to 14p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 22 April, 1850

Home! Sweet Home: as a waltz, by Francis Rziha. American Boquet, No. 1: 4to 2p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 6 August, 1850.

Star Spangled Banner: as a waltz, by Francis Rziha. American National Boquet, No. 2: 4to 2p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 6 August, 1850.

Hail Columbia: as a waltz, by Francis Rziha. American National Boquet, No. 3: 4to 2p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 6 August, 1850.

Melodeon Waltz; by Francis Rziha. American National Boquet, No. 4: 4to 2p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 6 August, 1850.

Believe me, if all those endearing young charms; as a waltz, by Francis Rziha. American National Boquet, No. 5: 4to 2p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 6 August, 1850.

Love not; as a waltz. Composed by Francis Rziha. Being No. 6 of the American National Boquet, a sett of brilliant waltzes, as performed by the Steyermarkische Company: 4to 5p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 6 August, 1850.

The Papageno Polka. Being No. 4 of the Boudoir Polkas. Composed for the piano forte, by Francis Rziha: 4to 5p — Baltimore, published by W. C. Peters; deposited by W. C. Peters, 16 October, 1850.

Old Whitey's Polka. Composed for the piano, by Francis Rziha: 4to 5p — Boston, published by A. & J. P. Ordway, 1850; deposited by A. & J. P. Ordway, 19 October, 1850.

The Amourette Polka. Being No. 3 of the Boudoir Polkas. Composed for the piano forte, by Francis Rziha: 4to 5p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 16 October, 1850.

- RZIHA** (Francis.) The Crambambuli Polka. Being No. 2 of the Boudoir Polkas. Composed for the piano forte, by Francis Rziha : 4to 5p — Baltimore, published by W. C. Peters, 1850 ; deposited by W. C. Peters, 6 August, 1850.
- SANDS** (H. B.) La Gazelle Rondo Valse, par H. B. Sands : 4to 5p — New York, chez Guillaume Vanderbeek, 479 Broadway ; deposited by Wm. Vanderbeek, 20 December, 1850.
- SANTA** Anna's March. Being No. 14 of W. C. Peters & Co.'s Selection of admired Duets, for two performers on the piano forte. Arranged by W. C. Peters : 4to 5p — Baltimore, published by W. C. Peters, 1850 ; deposited by W. C. Peters, 6 August, 1850.
- SAUL** (Geo.) Bury me in the little churchyard. Words by J. H. Warland. Music by Geo. Saul : 4to 5p — New York, published by Wm. Hall & Son, 1850 ; deposited by Wm. Hall & Son, 7 March, 1850.
- SCHERPF** (John C.) Sketch Club Waltzes. Composed by John C. Scherpf : 4to 8p — New York, published at Vanderbeek's, 1850 ; deposited by Wm. Vanderbeek, 4 October, 1850.
- SCHMITT** (Georges.) *Norma*. Grand Fantaisie brillante, pour le piano. Composé par Georges Schmitt : 4to 29p — New York, published by Firth, Pond & Co., 1850 ; deposited by Firth, Pond & Co., 11 October, 1850.
- SCHMITT** (J.) New Music Hall Waltz. Composed by J. Schmitt. Arranged by P. Y. Densari : 4to 2p — New York, published by S. Pearson, 1850 ; deposited by Sidney Pearson, 11 October, 1850.
- SCHREINER** (Hermann.) Souvenir de Wilmington Polka. Composed by Hermann Schreiner : 4to 5p — Baltimore, published by W. C. Peters, 1850 ; deposited by W. C. Peters, 16 October, 1850.
- Forget me not, Waltz. Composed by Hermann Schreiner : 4to 2p — Baltimore, published by G. Willig, Jr., 1850 ; deposited by G. Willig, Jr., 21 February, 1850.
- SCHUBERT's** Beautiful Melody, La Sérénade. Arranged as a vocal Duett, by Leopold Hoffman : 4to 7p — New York, published by Firth, Pond & Co., 1850 ; deposited by Firth, Pond & Co., 7 June, 1850.
- SCHWARZ** (J.) "Parce Domine," for penitential occasions. Composed by J. Schwarz : 4to 2p — Baltimore, published by W. C. Peters, 1850 ; deposited by W. C. Peters, 6 August, 1850.
- "Tantum Ergo." Composed by J. Schwarz : 4to 2p — Baltimore, published by J. C. Peters, 1850 ; deposited by W. C. Peters, 6 August, 1850.
- SCHWING** (Henry.) Louisa Polka. Composed by Henry Schwing : 4to 2p — Baltimore, published by W. C. Peters, 1850 ; deposited by W. C. Peters, 22 April, 1850.
- Three Ave Marias, for Soprano and Alto, with an accompaniment for the organ. Composed by Henry Schwing : 4to 5p — Baltimore, published by Geo. Willig, Jr., 1850 ; deposited by G. Willig, Jr., 21 February, 1850.

SCHWING (Henry.) Margaret Polka. Composed by Henry Schwing: 4to 2p — Baltimore, published by G. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February, 1850.

SCULL (B. F.) Deer Creek Polka. Composed by B. F. Scull: 4to 5p — Philadelphia, Couenhoven & Duffy; deposited by Couenhoven & Duffy, 21 December, 1850.

SERIOUS Family Polka (The). Arranged by George Loder: 4to 3p — New York, published by S. C. Jollie, for G. Loder; deposited by S. C. Jollie, 26 June, 1850.

(Same.) Arranged for the piano forte, by John Munk: 4to 4p — New York, published by Jaques & Brother, 1850; deposited by Jaques & Brother, 22 February, 1850.

SHAW (Oliver J.) "The Elysian Isle." No. 2 of "Gift Songs." The poetry by James H. Collier, Esq. Music composed and arranged by Oliver J. Shaw: 4to 5p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 7 June, 1850.

Song of the Cloud. [Being No. 1 of Gift Songs.] The poetry by James H. Collier, Esq. Music composed and arranged by Oliver J. Shaw: 4to 5p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 February, 1850.

SINCLAIR (R.) Ben Bolt. A favorite Song. The words by T. Dunn, Esq. The music composed by R. Sinclair: 4to 5p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 11 October, 1850.

"SLEEPING, I dreamed, Love." From Wallace's beautiful melody, *Le Réve*. Arranged with brilliant variations for the piano forte, by John C. Scherpf: 4to 11p — New York, published by Wm. Hall & Son, 1850; deposited by W. Hall & Son, 21 June, 1850.

SMITH (J. B.) "How shall I tell thee," Song. Composed and arranged for the piano, by J. B. Smith: 4to 2p — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May, 1850.

SNOW (The). Words by Charles Lamb, Esq. Adapted and arranged to an "Old English melody," by James G. Mæder: 4to 5p — New York, published by Wm. Hall & Son, 1850; deposited by W. Hall & Son, 1 March, 1850.

SOFGÉ (Henry D.) Souvenir d'Hungary. Composed for the piano forte, by Henry D. Sofge: 4to 5p — Louisville, Ky., published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 5 October, 1850.

Lilie Waltz. Composed for the piano, by Henry D. Sofge: 4to 5p — Louisville, Ky., published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 5 October, 1850.

Les Adieux Valse. Composed for the piano forte, by Henry D. Sofge: 4to 2p — Louisville, Ky., published by Peters,

Webb & Co., 1850; deposited by Peters, Webb & Co., 5 October, 1850.

SOFGÉ (Henry D.) Sentimental Waltz. Composed for the piano, by Henry D. Sofge: 4to 3p — Louisville, Ky., published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 5 October, 1850.

Cincinnati Polka, Mazurka. Composed for the piano forte, by Henry D. Sofge: 4to 5p — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May, 1850.

Newport Polka. Composed for the piano, by H. D. Sofge: 4to 2p — Louisville, Ky., published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 5 October, 1850.

SONG (The) she loved to sing, Ballad. Words from the City Item. Arranged for the piano forte, by J. T. Stoddard: 4to 5p — Baltimore, published by G. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February, 1850.

SPHOR (Louis.) Lovely Maiden, (Schönes Mädchen,) Duett, from Sphor's Opera of Jessonda. Arranged by W. C. Peters: 4to 11p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 16 October, 1850.

Lovely Maiden; Duett, from Jessonda. Music by L. Sphor. Arranged by J. F. Petri. Being No. 22 of W. C. Peters & Co.'s Selection of admired Duets, for two performers on the piano forte: 4to 11p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 16 October, 1850.

STODDARD (J. T.) Evergreen Waltz. Being No. 1 of Cottage Duets. Composed by J. T. Stoddard. Arranged by J. E. Müller: 4to 2p — Baltimore, published by G. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February, 1850.

STOP that knocking. Being No. 5 of Cottage Duets. Arranged by J. E. Müller: 4to 2p — Baltimore, published by G. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February, 1850.

STRAKOSCH (M.) Rosée du Matin. Etude poetique pour le piano, par M. Strakosch: 4to 11p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 6 August, 1850.

A selection of choice compositions of Maurice Strakosch. Serenade Andalouse: 4to 10p — Louisville, Ky., published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May, 1850.

California gold fever Gallop Scherzo. Composed by M. Strakosch: 4to 9p — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May, 1850.

STRAUSS. Alice Polka. Composed by Strauss. Arranged for the piano forte, by C. Lenschow: 4to 2p — Baltimore, published by G. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February, 1850.

STRAUSS' celebrated Bell Waltz. Arranged for the piano forte, by Dr. C. Lorenz: 4to 2p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 February, 1850.

The Greek Waltz, by Strauss. Arranged as a duett for the piano forte, by Henry Goold. [Being No. 25 of Firth, Pond & Co.'s Selection of admired Duets for two performers on the piano forte:] 4to 2p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 February, 1850.

STRIBY (William.) The Battle of Buena Vista. Composed and arranged for the piano forte, by Wm. Striby: 4to 12p — Louisville, published by H. J. Peters & Co., 1850; deposited by H. J. Peters, 25 May, 1850.

"In bliss we shall meet thee." Written on the death of Miss Serene N. Davis, by Rev. S. Dyer. Composed for the piano, by William Striby: 4to 5p — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May, 1850.

SUABIAN Waltz. Arranged by J. E. Müller: 4to 2p — Baltimore, published by G. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February, 1850.

"SUEKY Lane." Written by Miss Z. B. of Brooklyn, N. Y. Music adapted and arranged by N. W. Gould, of Christy's Minstrels. Sung by E. P. Christy: 4to 5p — New York, published by William Hall & Son, 1850; deposited by William Hall & Son, 19 August, 1850.

SWEDISH Nightingale Waltz. Composed for the piano forte, by an amateur: 4to 5p — New York, published by S. Pearson, 1850; deposited by Sidney Pearson, 11 October, 1850.

SWIFT (H.) "I loved thee when in earlier years." Written by the Rev. Geo. W. Bethune. Composed by H. Swift: 4to 2p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 February, 1850.

"I loved thee when in earlier years." Words by G. W. Bethune, D. D. Composed and arranged for the guitar, by H. Swift: 4to 2p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 11 October, 1850.

SZEMELÉNYI (Ernst.) Csardas No. 3; Hungarian Air. Composed by E. Szemelenyi: 4to 5p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 22 April, 1850.

Kossuth's Grand Hungarian National March. Arranged for the piano forte, by E. Szemelenyi: Baltimore, published by G. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February, 1850.

Csardas II.; Hungarian Air. "Tout est perdu hormis l'Honneur." Opus 18; by E. Szemelenyi: 4to 5p — Baltimore, published by G. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February, 1850.

Mad'le Jagiello's Magyar Quick-step. Composed by E. Szemelenyi. Opus 19: 4to 4p — Baltimore, published by

W. C. Peters, 1850 ; deposited by W. C. Peters, 18 January, 1850.

SZEMELENYI (E.) *The Hungarian Exile*. Words by Mrs. Phelps. Music by Ernst Szemelenyi: 4to 2p—Baltimore, published by G. Willig, Jr., 1850 ; deposited by G. Willig, Jr., 21 February, 1850.

The Musical Treasure ; a circle of progressive pieces for young performers. Composed by Ernst Szemelenyi: 4to 11p—Baltimore, published by G. Willig, Jr., 1850 ; deposited by G. Willig, Jr., 21 February, 1850.

Csardas ; *Hungarian's Lament*. Composed by Ernst Szemelenyi. Op. 17: 4to 5p—Baltimore, published by G. Willig, Jr., 1850 ; deposited by G. Willig, Jr., 21 February, 1850.

Csardas No. 4 ; "*Hungarian Dance*." Composed by E. Szemelenyi: 4to 5p—Baltimore, published by W. C. Peters, 1850 ; deposited by W. C. Peters, 22 April, 1850.

Elégie Poétique. Composed by E. Szemelenyi. Opus 20: 4to 7p—Baltimore, published by W. C. Peters, 1850 ; deposited by Wm. C. Peters, 22 April, 1850.

TAYLOR (Geo. C.) *Music Room Waltz*. Composed and arranged for the piano forte, by Geo. C. Taylor: 4to 9p—New York, published by Firth, Pond & Co., 1850 ; deposited by Firth, Pond & Co., 11 October, 1850.

TEMPLE (J. P.) *Emma Dale*. Arranged for the piano forte. Words by Wm. N. Chambers. Music by J. P. Temple: 4to 4p—New Orleans, published by Wm. T. Mayo, 1850—New York, by Firth, Pond & Co., 1850 ; deposited by Wm. T. Mayo, 9 April, 1850.

Emma Dale. Composed by J. P. Temple. Arranged for the guitar, by Thomas J. Marlen: 4to 3p—New York, published by Firth, Pond & Co., 1850 ; deposited by Firth, Pond & Co., 7 June, 1850.

THERE's love for you and me. Words by the late Thomas Hood. Adapted and arranged by J. H. Hewitt: 4to 2p—Baltimore, published by G. Willig, Jr., 1850 ; deposited by G. Willig, Jr., 21 February, 1850.

"THERE's magic in that little song ;" a popular Ballad. Arranged for the piano, by Mad'lle Anna Ablamowicz: 4to 5p—Louisville, published by Peters, Webb & Co., 1850 ; deposited by Peters, Webb & Co., 25 May 1850.

(Same.) Arranged for the guitar.

"THEY say there is an echo there." Music of the Alleghanians, Songs, Duetts, Glees, &c., No. 8.: 4to 5p—New York, published by William Hall & Son 1850 ; deposited by Wm. Hall & Son, 19 May, 1850.

THOMAS (E.) "*The dew is on the Blossom* ;" *Serenade*. Written by Amelie. Music by E. Thomas. Arranged for the guitar: 4to 5p—Baltimore, published by W. C. Peters, 1850 ; deposited by W. C. Peters, 16 October, 1850.

THORBECKE (Edward.) *Aridante*, for the organ or piano forte. Composed by Edward Thorbecke: 4to 5p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 16 October, 1850.

The Boat Horn. Words by Gen. W. O. Butler. Composed by E. Thorbecke: 4to 5p — Baltimore, published by G. Willig, Jr., 1850; deposited by G. Willig, Jr., 21 February, 1850.

“*THOU art gone away, Mary;*” Ballad. Sung by Joseph H. M’Cann. Words by R. T. Cosby. Melody by a lady. Arranged for the piano forte, by H. J. Peters: 4to 2p — Louisville, published by Peters & Webb, 1850; deposited by Peters & Webb, 25 May, 1850.

“‘*Tis but an hour since first we met.*” Ballad, by W. Preston Wolley. Music arranged by William Cumming: 4to 6p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 16 October, 1850.

TRIFLES; Song. Words taken from the Albany Express. Music composed by the author of “*You and Me*”: 4to 5p — New York, published by Firth, Pond & Co., 1850; deposited by Boardman & Gray, 9 February, 1850.

TUCKER (Henry.) *The Maiden’s Tear.* Words by J. R. Meeker, Esq. The music composed by Henry Tucker: 4to 5p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 11 October, 1850.

The Forest Queen. Words by E. C. Hine, U. S. N. Composed by Henry Tucker: 4to 5p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 11 October, 1850.

TWILIGHT Dews. Arranged for the guitar, by Lewis Tripp: 4to — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May, 1850.

UNDERNER (John.) *My woodland home, I love thee well*; Ballad. Composed and arranged for the piano forte, by John Underner: 4to 6p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 7 June, 1850.

I’d like to live in yonder star; a Ballad. Composed for the piano forte, by John Underner: 4to 5p — New York, published by Firth, Pond & Co.; deposited by Firth, Pond & Co., 7 June, 1850.

Mgdalena Polka. Composed by John Underner: 4to 2p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 February, 1850.

VATER (T. J.) “*The blind boy’s been at play, Mother;*” as sung by the Apollonian Melodists. Written by Miss Eliza Cook: Quartette. Composed and arranged for the piano forte and Spanish guitar, by T. J. Vater: 4to 5p; deposited by T. J. Vater, 16 December, 1850.

- VERY WORST Polka (The). By Schlecter als Schlecht : 4to 5p — New York, published by Sidney Pearson, 1850 ; deposited by Sidney Pearson, 2 November, 1850.
- VIENI ah Vien ; from *La Favorita*. Arranged by John C. Scherpf : 4to 2p — New York, published at Vanderbeek's, 1850 ; deposited by Wm. Vanderbeek, 15 October, 1850.
- VIRGINIA Rosebud. Being No. 5 of Songs of the Sable Harmonists. Arranged for the piano forte : 4to 4p — Louisville, Ky., Peters, Webb & Co., 1850 ; deposited by Peters, Webb & Co., 5 October, 1850.
- WAGNER (Ferdinand.) Coterie Waltz ; as performed by Munck's band. Composed by Ferdinand Wagner : 4to 7p — New York, published at Vanderbeek's, 1850 ; deposited by Wm. Vanderbeek, 4 October, 1850.
- WAHL (J. F.) The Bowling Green Waltz, for the piano. Composed by J. F. Wahl : 4to 5p — Louisville, published by Peters, Webb & Co., 1850 ; deposited by Peters, Webb & Co., 25 May, 1850.
- WALLACE (W. Vincent.) Innocence ; Romance. Composed for the piano forte, by W. Vincent Wallace : 4to 5p — New York, published by Firth, Pond & Co. ; deposited by Firth, Pond & Co., 7 January, 1850.
- WARREN (Geo. W.) Old Haunts ; Ballad. Composed by Geo. W. Warren : 4to 3p — New York, published by Firth, Pond & Co., 1850 ; deposited by Firth, Pond & Co., 9 April, 1850.
- The Passions ; Waltzes. Composed by Geo. W. Warren : 4to 7p — New York, published by Firth, Pond & Co., 1850 ; deposited by Firth, Pond & Co., 9 February, 1850.
- Love's Twilight Star ; as sung by Miss Electa Cone. Music composed by G. W. Warren. Arranged for the guitar, by Thomas Crouch : 4to 2p — New York, published by Firth, Pond & Co., 1850 ; deposited by Firth, Pond & Co., 11 October, 1850.
- "Sunshine and Dew ;" Ballad. Written by Lilly Graham. Composed by Geo. W. Warren : 4to 3p — New York, published by Wm. Hall & Son, 1850 ; deposited by Wm. Hall & Son, 19 August, 1850.
- WEBER (C. H.) Missouri Waltz, for the piano. Composed by C. H. Weber : 4to — Louisville, published by H. J. Peters & Co., 1850 ; deposited by H. J. Peters & Co., 25 May, 1850.
- WEISEL (Paul K.) Gaslight Schottisch. Composed for the piano forte, by Paul K. Weisel : 4to 4p — published at Vanderbeek's, 1850 ; deposited by Wm. Vanderbeek, 4 October, 1850.
- WELLS (S. A.) "Philena, my dear, or, she dances so neatly." Words and melody by S. A. Wells, Esq. Music arranged for the piano, by J. P. Ordway : 4to 5p — Boston, published by A. & J. P. Ordway, 1850 ; deposited by A & J. P. Ordway, 19 October, 1850.

WELLS (S. A.) "Poor Posey, or, She's gon across de sandy plain." Words and melody by S. A. Wells, Esq. Music arranged for the piano, by J. P. Ordway : 4to 5p — Boston, published by A. & J. P. Ordway, 1850; deposited by A. & J. P. Ordway, 19 October, 1850.

WELS (Charles.) Grand Funeral March; as played by Dodworth's band, on the occasion of the funeral solemnities in the city of New York, to the memory of Gen. Zachary Taylor, July 23d, 1850. Composed by Chas. Wels : 4to 3p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 11 October, 1850.

WETMORE (W. J., M. D.) Cousin Carrie; a Song. Written by Carl Linley. Composed by W. J. Wetmore, M. D. : 4to 7p — New York, published by Firth, Pond & Co., 1850; deposited by W. J. Wetmore, 9 April, 1850.

Norah M'Shane; Ballad. Poetry by Miss Eliza Cook. Music by W. J. Wetmore : 4to 5p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 April, 1850.

WHITE (C.) "Do not go away, my lady love." No 2 of Ethiopian Melodies of White's Serenaders; as sung by them at their concerts. Composed by C. White : 4to 5p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 7 June, 1850.

(J. M.) Cleopatra Hyde; a Duett and Chorus. Words by Prof. Sligo. Music by J. M. White : 4to 5p — Boston, published by A. & J. P. Ordway, 1850; deposited by A. & J. P. Ordway, 19 October, 1850.

WILLIAMS (T. H.) Petit Fantasia, for the harp, on the celebrated Ethiopian Melodies, "Lousiana Belle," "Uncle Ned," and "Susannah." Composed by T. H. Williams : 4to 11p — Baltimore, published by W. C. Peters, 1850; deposited by W. C. Peters, 22 April, 1850.

(Waters F.) I'm still unchanged to thee; Ballad. Composed by Waters F. Williams : 4to 3p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 February, 1850.

WILSON (J.) "Tell me how to woo thee;" a beautiful Ballad. Written by M. Graham. Arranged for the guitar, by Frnncis. Music by J. Wilson : 4to — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May 1850.

(Same.) Arranged for piano.

Maiden's Lament, or, Despairing Mary. Words by T. C. Music by J. Wilson : 4to 5p — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May, 1850.

WOODBURY (I. B.) Sweet Memories Waltz. Composed by I. B. Woodbury : 4to 2p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 7 June, 1850.

WOODBURY (I. B.) *We're all at home, or, When evening shadows.* Composed by I. B. Woodbury: 4to 5p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 7 June, 1850.

WOODBURY (I. B.) *Elfin Quick-step,* by I. B. Woodbury: 4to 2p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 11 October, 1850.

“*Bé kind to the loved ones at home;*” Song, composed by I. B. Woodbury. Arranged for the guitar, by J. D. Anguera: 4to 6p — Boston, published by A. & J. P. Ordway: deposited by A. & J. P. Ordway, 19 October, 1850.

“*Be kind to the loved ones at home;*” Song, composed by I. B. Woodbury. Arranged as a quartett, by J. B. Ordway: 4to 5p — Boston, published by A. & J. P. Ordway; deposited by A. & J. P. Ordway, 19 October 1850.

“*Forget not the loved ones at home.*” Written and composed by I. B. Woodbury: 4to 5p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 7 June, 1850.

“*Ye mariners of Spain;*” Ballad, arranged for the guitar as a duett, for two equal voices, by M. R. H.: 4to 5p — Louisville, published by Peters, Webb & Co., 1850; deposited by Peters, Webb & Co., 25 May, 1850.

(Same.) Arranged for the piano, by M. R. H.

“*You and I.*” Written by J. Francis, Esq. Arranged for the piano forte, by H. J. Peters: 4to 2p — Louisville, published by H. J. Peters & Co., 1850; deposited by H. J. Peters & Co., 25 May, 1850.

You and Me; Song. Words by the late Thomas Hood. Composed and dedicated with esteem, to “*Cally.*” Arranged with symphonies and accompaniments, for the piano forte: 4to 3p — Albany, published by Boardman & Gray, 1850; deposited by Boardman & Gray, 11 October, 1850.

ZORER (Maximilian.) *The May Breezes.* Words translated from the German, by Chas. G. Leland. Composed by M. Zorer: 4to 5p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 February, 1850.

May Breezes Waltz. By Maximilian Zorer: 4to — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 February 1850.

The Bird and the Snare. Words by C. G. Leland, Esq. Composed and arranged for the Spanish guitar, by Max Zorer: 4to 2p — New York, published by Firth, Pond & Co.; deposited by Firth, Pond & Co., 11 October, 1850.

The Bird and the Snare. Words from the German, by C. G. Leland, Esq. Composed by Max Zorer: 4to 4p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 9 April, 1850.

- ZORER (Max.)** The May Breezes. Words from the German, by Chas. G. Leland, Esq. Music composed and arranged for the guitar, by Max Zorer: 4to 2p — New York, published by Firth, Pond & Co., 1850; deposited by Firth, Pond & Co., 7 February, 1850.

PART III—LIST OF MAPS, CHARTS, PRINTS, and LABELS.

- ALMANAC Card.** Deposited by William W. Rose, 9 July, 1850.
- BELLINGHAM (O.)** A Chart of the Signs furnished by Auscultation and Percussion, and of their application to the diagnosis of diseases of the lungs. Revised and arranged by P. Claiborne Gooch, A. M., M. D., &c., from the French of O. Bellingham, M. D. P. Made up from the works of Laënnec, Williams, Barth and Roger, Gerhard, Fournet, Spittal, and other high authorities. Published by Morris & Brother, Richmond, Va.; deposited by P. Cl. Gooch, 21 November, 1850.
- BON Samaritain (Le) de Moffat.** [Wrapper used by Dr. Wm. B. Moffat, on his medicine, called "The Phœnix Bitters." Three copies, French, Spanish and German.] Deposited by Wm. B. Moffat, M. D., 30 May, 1850.
- BOSTIAN (J. M.)** Directions for measuring and drafting Garments, by the tendon steel spring, by J. M. Bostian: 12mo 31p — Sunbury, published by the Author, 1850; deposited by Jonathan M. Bostian. [Together with a waist measure on a separate sheet, by J. M. Bostian;] deposited, 28 December, 1850.
- BROOKS (L.)** Perpetual Almanac; showing the dominical letters, leap years, days of the month and week; and all dates, near and remote, past and future, with infallible accuracy, for ten thousand years from the beginning of the Christian Era. By L. Brooks: deposited by L. Brooks, 16 February, 1850.
- Perpetual Almanac; showing the dominical letters, leap years, days of the month and week; and all dates, near and remote, past and future, with infallible accuracy, for ten thousand years from the beginning of the Christian Era. [Card:] deposited by L. Brooks, 27 March, 1850.
- Simple and compound Interest Table, and Indicator, for any amount from one cent to \$1000, at 6 per cent., from one day to seven years; warranted accurate. Also a short and easy method of equation of payments, time table, table of interest of one dollar, from one day to twelve months, and table of compound interest. [Card:] deposited by L. Brooks, 27 March, 1850.
- Simple and compound Interest Table, and Indicator, for any amount from one cent to \$1000, at 6 per cent., from one day to

seven years; warranted accurate. Card: deposited by L. Brooks, 27 March, 1850.

CHATEAU de la Grange, the birthplace of Lafayette. Print: deposited by J. P. M'Lean, 26 April, 1850.

COFFIN (Eben S.) Tables, showing at one inspection, the difference of Latitude and Departure, on every quarter point course for any distance under 60 miles: 8vo 2p — Boston, 1850; deposited by Eben S. Coffin, 25 July, 1850.

COMPOUND Syrup of Hops and Boneset. Label: deposited by C. W. H. Temple, 20 February, 1850.

DISTURNELL's (J.) new map of Central America, showing the different lines of Atlantic and Pacific communication — New York, published by J. Disturnell, 157 Broadway, 1850; deposited by J. Disturnell, 5 July, 1850.

New map of the United States and Canada, showing all the canals, railroads, telegraph lines, and principal stage routes. Drawn by Henry A. Burr, Topographer of the Post-office Department, Washington — New York, published by J. Disturnell, 1850; deposited by J. Disturnell, 15 July, 1850.

EQUARIAN Condition Powders. Label: deposited by W. H. Wyatt, 27 December, 1850.

FAHNESTOCK's (B. A.) Vermifuge. Label: deposited by Rawdon, Wright, Hatch & Edson.

FISHER (Samuel B.) and **SHEAFER** (P. W.) Map of the first and second anthracite coal-fields in Pennsylvania; embracing Schuylkill county, and parts of Carbon, Luzerne, Columbia, Northumberland, Dauphin, and Lebanon counties, by Samuel B. Fisher and P. W. Sheaffer: published by Robert P. Smith, 15 Minor street, Philadelphia; deposited by R. P. Smith, 2 March, 1850.

FORSHA's Balm Liniment. Label: deposited by Samuel W. Forsha, 13 May, 1850.

FOWLER's (P. G.) improved Model; or, Dress-making made easy. With plain instructions: 8vo 8p, and chart — New York, Butler & Brown, printers and wood engravers, 1850; deposited by P. G. Fowler, 29 October, 1850.

GOOCH (P. Claiborne.) See: Bellingham (O.)

HOOFLAND's celebrated German Bitters. Circular and Engraving; deposited by Dr. C. M. Jackson, 15 July, 1850.

JEWETT (Stephen) & Co.'s Chromolith Card — Boston, Chromolith of J. H. Bufford & Co.; deposited by S. Jewett & Co., 19 March, 1850.

JEWETT (Stephen) & Co.'s highly and justly celebrated strengthening Plaster. Bufford & Co.'s Lithograph — Boston: Label; deposited by S. Jewett & Co., 26 December, 1850.

JEWETT (Stephen) & Co.'s highly celebrated Pulmonary Elixir. J. H. Bufford & Co.'s Lithograph — Boston: Label; deposited by S. Jewett & Co., 26 December, 1850.

- JEWETT** (Stephen) & Co.'s celebrated health restoring Bitters. J. H. Buford & Co.'s Lithograph—Boston: Label; deposited by S. Jewett & Co., 26 December, 1850.
- LIND** (Jenny,) in the Opera of La Sonnambula. New York, Wm. Hall & Son: Print; deposited by Wm. Hall & Son, 21 June, 1850.
- LIND** (Jenny.) New York, published by Wm. Hall & Son, 1850: Print; deposited by Wm. Hall & Son, 21 June, 1850.
- LIND** (Jenny,) in the Opera of La Fille du Regiment. New York, Wm. Hall & Son: Print; deposited by Wm. Hall & Son, 21 June, 1850.
- "**MASTER'S** Carpet," by Sherer & Co., Pike street, between Congress and Third street, Cincinnati, 1850: Chart; deposited by J. Sherer, 26 December, 1850.
- MASURY'S** Compound Extract of Sarsaparilla and Wan-a-hoo. [Label.]
- MERCER** County. Map of Mercer county, New Jersey, entirely from original Surveys, by J. W. Otley and J. Keily, Surveyors—Lloyd Vanderveer, publisher, Camden, N. J.; deposited by Robert P. Smith, 21 June, 1850.
- MOFFAT'S** celebrated Phœnix Bitters. [Label.] One copy of the wrapper used on the same, entitled "The Good Samaritan;" deposited by Rawdon, Wright, Hatch & Edson, 18 May, 1850.
- Vegetable Life Pills. New York, designed and engraved by Rawdon, Wright, Hatch & Edson: Label; deposited by Rawdon, Wright, Hatch & Edson.
- NEW ENGLAND**, New York and Canada. Sherman & Smith's Railroad, Steamboat and Stage route map of New England, New York and Canada. By J. Calvin Smith—New York, published by Sherman & Smith, 1850; deposited by Sherman & Smith, 21 December, 1850.
- NEWMAN'S** portable Sun-dial and perpetual Calendar: A small Chart; deposited by James Newman, 1 July, 1850.
- PENNINGTON & Co.'s** aerial Steamship, or composite Balloon: A lithographic Print; deposited by J. H. Pennington, 30 July, 1850.
- PULSIFER** (John S.) [A lithographic Print, containing a number of short precepts, in a new alphabet: "Remember the Truth," "The Truth shall exalt thee," &c., with remarks on a new Orthography, &c.; all in a new alphabet.] John S. Pulsifer, Orwigsburg, Schuylkill county, Pa.; deposited 21 December, 1850.
- SAINT PAUL'S** Travels. The Countries embraced within the Travels of St. Paul: A miniature map, on pasteboard; deposited by A. M. Wilder and Geo. W. Fitch, 15 February, 1850.
- SMITH'S** (A. A.) Chart of Elocution. Printed at the Telegraph book and job office, Ashtabula, Ohio; deposited by A. A. Smith, 3 December, 1850.
- SMITH** (Jas. B.) & Co.'s Philadelphia Blank Book Manufactory: Print; deposited by Jas. B. Smith, 29 August, 1850.

- SUTTER** (T. A.) An engraved likeness of T. A. Sutter. Painted by S. S. Osgood : engraved by J. Sartain ; deposited by S. S. Osgood, 11 July, 1850.
- TEXAS.** Map of Texas, compiled from Surveys recorded in the General Land Office, by J. Eppinger and F. C. Baker, 1851. [On the S. E. corner of the same, a] "Map of New Mexico, California and Utah:" deposited by Sherman & Smith, 21 December, 1850.
- WASHINGTON's** Headquarters, from north-east, Newburg : Print ; deposited by J. P. M'Lean, 26 April, 1850.
- YOUNMAN's** Chart of Chemistry ; in which the fundamental laws and facts of the science, affinity, the composition and decomposition of bodies, combining equivalents, or definite and multiple proportions, the atomic theory, chrystallization, fermentation, isomerism, the nomenclature and formula are illustrated to the eye in a clear and simple manner. Published by Edward L. Youmans and J. Richard Burdsall, New York, 1850 ; deposited by Edward L. Youmans, 18 December, 1850.

SIXTH ANNUAL REPORT

OF THE

BOARD OF REGENTS

OF

THE SMITHSONIAN INSTITUTION,

TO THE

SENATE AND HOUSE OF REPRESENTATIVES,

SHOWING THE

OPERATIONS, EXPENDITURES AND CONDITION OF THE INSTITUTION,
DURING THE YEAR 1851,

AND THE

PROCEEDINGS OF THE BOARD OF REGENTS UP TO DATE,

WASHINGTON:
PRINTED BY A. BOYD HAMILTON.

1852.

LETTER

FROM

THE SECRETARY OF THE SMITHSONIAN INSTITUTION,

COMMUNICATING

THE ANNUAL REPORT OF THE BOARD OF REGENTS.

AUGUST 20, 1852.

Ordered to lie on the table and be printed.

AUGUST 26, 1852.

Ordered, That 5000 additional copies be printed—2000 of which for the use of the Smithsonian Institute.

SMITHSONIAN INSTITUTION,

August 20, 1852.

SIR: I have the honor herewith to transmit to you the annual report of the Board of Regents of the Smithsonian Institution, and beg leave to request that you will present the same to the Congress of the United States.

I am, sir, very respectfully, your obedient servant,

JOSEPH HENRY, *Secretary.*

Hon. WILLIAM R. KING,

President of the Senate.

OFFICERS OF THE SMITHSONIAN INSTITUTION.

MILLARD FILLMORE, *Ex-officio* Presiding Officer of the Institution.

ROGER B. TANEY, Chancellor of the Institution.

JOSEPH HENRY, Secretary of the Institution.

CHARLES C. JEWETT, Assistant Secretary in charge of the Library.

SPENCER F. BAIRD, Assistant Secretary in charge of the Museum.

EDWARD FOREMAN, General Assistant.

ALEXANDER D. BACHE,	}	Executive Committee.
JAMES A. PEARCE,		
JOSEPH G. TOTTEN,		

RICHARD RUSH,	}	Building Committee.
GRAHAM N. FITCH,		
WALTER LENOX,		
JOSEPH HENRY,		

W. W. SEATON, Treasurer.

JAMES RENWICK, Jr., Architect.

GILBERT CAMERON, Contractor.

REGENTS OF THE INSTITUTION.

————— Vice President of the United States.
 ROGER B. TANEY, Chief Justice of the United States.

WALTER LENOX, Mayor of the City of Washington.

JAMES A. PEARCE, Member of the Senate of the United States.

JAMES M. MASON, Member of the Senate of the United States.

————— Member of the Senate of the United States.

GRAHAM N. FITCH, Member of the House of Representatives of the United States.

WILLIAM F. COLCOCK, Member of the House of Representatives of the United States.

JAMES MEACHAM, Member of the House of Representatives of the United States.

RUFUS CHOATE, Citizen of Massachusetts.

GIDEON HAWLEY, Citizen of New York.

WILLIAM C. PRESTON, Citizen of South Carolina.

RICHARD RUSH, Citizen of Pennsylvania.

ALEXANDER D. BACHE, Member of the National Institute, Washington.

JOSEPH G. TOTTEN, Member of the National Institute, Washington.

MEMBERS EX-OFFICIO OF THE INSTITUTION.

MILLARD FILLMORE, President of the United States.

————— Vice President of the United States.

DANIEL WEBSTER, Secretary of State.

THOMAS CORWIN, Secretary of the Treasury.

CHARLES M. CONRAD, Secretary of War.

WILLIAM A. GRAHAM, Secretary of the Navy.

NATHAN K. HALL, Postmaster General.

JOHN J. CRITTENDEN, Attorney General.

ROGER B. TANEY, Chief Justice United States.

THOMAS EWBANK, Commissioner of Patents.

WALTER LENOX, Mayor of the City of Washington.

HONORARY MEMBERS.

ROBERT HARE,

BENJAMIN SILLIMAN,

WASHINGTON IRVING.

SIXTH ANNUAL REPORT OF THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION, SHOWING THE OPERATIONS, EXPENDITURES AND CONDITION OF THE INSTITUTION UP TO JANUARY 1, 1852.

To the Senate and House of Representatives :

In obedience to the act of Congress of August 10, 1846, establishing the Smithsonian Institution, the undersigned, in behalf of the Regents, submit to Congress, as a report of the operations, expenditures and condition of the institution, the following documents :

1. The Annual report of the Secretary, giving an account of the operations of the Institution during the year 1851, including reports from the Assistant Secretaries, relative to the library, museum, &c.
2. Report of the Executive Committee, giving a general statement of the proceeds and disposition of the Smithsonian fund, and also an account of the expenditures for the year 1851.
3. Report of the Building Committee relative to the progress made in 1851, in the erection of the Smithsonian edifice.
4. Proceedings of the Board of Regents.
5. Appendix.

Respectfully submitted,

ROGER B. TANEY, *Chancellor.*

JOSEPH HENRY, *Secretary.*

6th Report of Board, for 1857

REPORT OF THE SECRETARY.

To the Board of Regents of the Smithsonian Institution:

GENTLEMEN: Besides the care of all the property of the Institution, and the responsibility of the direction of its operations, under the control of the Regents, the secretary is required to give an account, at their annual session, of the condition of the Institution, and of its transactions during the preceding year.

In the discharge of this duty on the present occasion, I am happy to inform the Regents that the Institution under their care is still in a prosperous condition, and that since their last meeting, it has continued silently, but effectually, to enlarge the sphere of its influence and usefulness, and to elicit from every part of the civilized world commendations, not only of the plan of organization it has adopted, but also of the results it has produced.

In my last report I gave a brief account of the means employed to increase the income, so that in addition to the requirements of Congress in regard to the formation of a library and a museum, and the erection of a building on a liberal scale, operations of a more active character could be incorporated into the plan of organization.

During the past year the same policy has been observed; and though the officers of the Institution have been subjected to the inconvenience of transacting business in an unfinished building, and in rooms not intended for the purpose, yet this has been considered of minor importance in comparison with the saving of the funds. Every dollar now expended on the building lessens the amount of accruing interest, and diminishes the means of producing results which are to affect the world at large; hence the importance of an adherence to the plan of finishing it by degrees. Since the last session of the board, it has, therefore, not been thought advisable to urge the contractor to a rapid completion of his work, and all the expenditures on account of the building have been made from the accrued interest of the current year, and from a portion of that of the year preceding. There is consequently still on hand the two hundred thousand dollars of accumulated interest mentioned in the last and preceding reports. Of this, it will be recollected, \$50,000 are to be applied towards finishing the building, and the remainder to be invested as part of the principal.

The importance of increasing the funds and of gradually developing the operations embraced in the programme, was set forth in the last report. The Institution, it is to be hoped, is not one of a day, but is to endure as long as our government shall last; it is therefore necessary, in the beginning, that we should constantly look to the future, and guard against the temptation, to which we are continually exposed, of expanding too rapidly.

By a resolution of the board, at their session in 1849, the Secretary was directed to petition Congress to take from the Institution \$150,000, and such other sums, not exceeding in all \$200,000, as may have been, or shall

be received in accruing interest or otherwise, upon the same terms as those on which the original bequest had been accepted. This petition was referred to a committee and favorably reported upon; but unfortunately the press of business prevented Congress from acting upon it at their last session. The petition will again be renewed, and it is believed that so reasonable a request will meet with a favorable reception. It is, however, thought important that the amount should be increased, and that the sum of \$250,000 be inserted in the petition, instead of that named in the resolution.

In addition to the \$150,000 which the regents thus seek to invest, there is still a portion of the original legacy remaining in England as the principal of an annuity settled upon Madame De la Batut, the mother of the nephew of Smithson, to whom his property was originally bequeathed. Besides this, I am informed, upon good authority, that the Institution is the contingent legatee of an estate of considerable magnitude, depending on the demise without issue of a single individual. We may also reasonably expect that if the affairs of the Institution are properly conducted, and its funds judiciously husbanded, or properly expended on the legitimate objects of the bequest, other trusts will be committed to its care. It therefore becomes important that the limit should be at least \$250,000, so that the whole sum, including the original bequest, shall amount to a little more than \$750,000. There can surely be no just grounds of fear that the income of this sum will be devoted to improper uses, so long as it is an essential part of the plan to produce fruits, the value of which can be judged by all who are capable of appreciating the advance of knowledge. This request is also in accordance with the policy adopted by the Institution of asking nothing from Congress but the safe keeping of its funds, and the appointment to its board of regents of gentlemen of intelligence and high moral principles.

The government has thus far liberally fulfilled the obligations which it imposed upon itself in accepting the trust. Not only has the original sum been permanently invested in the treasury of the United States, but interest has been allowed from the time of receiving the funds. Congress has also made several donations to the Institution, which, though they will not prove as valuable to us as could be wished, indicate a liberal intention. The first gift was the great museum of the Exploring Expedition, for the accommodation of which the larger portion of the present building was originally intended; the second was a grant of nineteen acres of land surrounding the building of the Institution; the third, a copy of every book published in the United States for which a copyright might be granted; the fourth and last gift was that of all the plates, manuscripts, &c., of the Exploring Expedition, for the purpose of publishing a new edition for distribution.

These donations, though made with kindly feelings and in a spirit of liberality, have proved singularly unprofitable. The maintenance of the museum of the Exploring Expedition would subject the Institution to an annual expense which would materially interfere with more important operations. After expending several thousand dollars on the improvement of the grounds, it has been deemed best to return them to the charge of the general government. Were the copyright act fully complied with, perhaps some benefit might accrue from it to the Institution; but in the manner in which it is at present observed, the expense of postage and of

clerk hire in recording the titles and furnishing the certificates of deposit, has more than equalled the value to us of all the books received. Lastly, it has been estimated that the publication of a new edition of the expensive volumes of the results of the Exploring Expedition would cost at least fifty thousand dollars. Fortunately, it has not been considered obligatory on the Institution, except in the case of the copyright law, to accept these gifts.

Publication of memoirs.—Since the adoption of the plan of organization, nearly fifty original memoirs, purporting to be additions to the sum of human knowledge, have been presented to the Institution for publication. Though a number of these have been returned to their authors, principally on account of not falling within the restricted class of communications accepted for publication, yet they have generally been productions of much merit, and have evinced a surprising activity of mind, and manifest a growing attention in this country to original research. The probable success of this part of the plan of organization was not overrated; for, were the whole income of the institution devoted alone to publishing the results of the labors of men of literature and of science, which otherwise would never see the light, it could be profitably expended. In this respect, the Smithsonian bequest supplies the wants which in Europe are met by richly endowed academies and national societies.

It will be recollected that each memoir is printed separately, and with a separate title and paging, so that it can be distributed to persons most interested in its perusal as soon as it comes from the press, without waiting for the completion of the volume to which it belongs. In this way, the author is enabled to present a full account of his discoveries to the world with the least possible delay, while, by the rules of the Institution, he is allowed to publish an abstract of his paper in the proceedings of the American Association for the advancement of science, or in those of any other properly organized society.

The number of copies of the Smithsonian Contributions distributed is greater than that of the transactions of any scientific or literary society, and therefore the Institution offers the best medium to be found for diffusing a knowledge of scientific discoveries.

Every memoir published by the Institution is issued with the stamp of approval of a commission of competent judges, and in order to secure a cautious and candid opinion, the name of the author, and those of the examiners, are not made known to each other unless a favorable report is given, and, in this case, the names of the commission are printed, as vouchers for the character of the memoir, on the reverse of the title-page.

This plan secures an untrammelled expression of opinion, while it induces caution on account of the responsibility which it involves.

Besides deciding on the fitness of original memoirs for publication, the Institution is continually applied to for information relative to almost every department of literature and science. Respectful attention is always given to these applications, and when the desired answer does not fall within the line of study of any officer of the Institution, it is sought for from those in whose knowledge and judgment we have full confidence. No inconsiderable portion of time is occupied in giving the information involved in the answer to these inquiries; but I am happy to inform the board that in this service, as well as in that of examining memoirs, we have received the co-operation of a considerable number of the most distinguished individuals in our coun-

try, and in scarcely a single case has application for assistance in this way been refused. By the operation of the plan adopted, the Institution can command the talents and learning of the world, and with a small corps of permanent officers, or a sufficient clerical force, can discharge the duty of an association to which subjects, relative to all branches of knowledge, can be referred.

There is one class of requests which, by a resolution of the Board of Regents, we are directed to refuse, viz : those for the examination and approval of the innumerable inventions by which the ingenious and enterprising seek to better their own condition and that of the public. Were it not for this resolution, originally proposed by Governor Cass, we would be overwhelmed with applications of this kind, and have forced upon us the business of the Patent Office. Besides this, the principal object of the organization is the discovery of new truths, rather than the application of known principles to useful purposes. Not that we would undervalue the labors of the inventor ; but because practical knowledge has a marketable value which always insures its cultivation, provided the higher philosophical truths on which it is founded are sufficiently developed and made known.

The idea is still very generally entertained that Smithson bequeathed his property to this country for the diffusion of useful knowledge among the people, and that his intention would be best consulted by the expenditure of all the income in the publication and general distribution of tracts on practical subjects. The adoption of this plan would be to dissipate the funds without beneficial effect. A single report of the Patent Office costs, in some instances, more than three times the income of the Smithsonian fund, which itself would be insufficient for the general diffusion of a single octavo page of printed matter. The property, however, was not left to the inhabitants of the United States, but to the government, in trust for the good of man ; and not merel for the dissemination or diffusion of knowledge, but, first of all, for creating, originating, increasing it. Furthermore, Smithson does not confine his bequest to the promotion of *useful* knowledge alone, in the lower sense of the term, but includes all knowledge in his liberal and philosophical design. The true, the beautiful, as well as the immediately practical, are all entitled to a share of attention. All knowledge is profitable ; profitable in its ennobling effect on the character, in the pleasure it imparts in its acquisition, as well as in the power it gives over the operations of mind and of matter. All knowledge is useful ; every part of this complex system of nature is connected with every other. Nothing is isolated. The discovery of to-day, which appears unconnected with any useful process, may, in the course of a few years, become the fruitful source of a thousand inventions.

That the encouragement of the discovery of new truths, the publication of original memoirs, and the establishment of new researches, are in conformity with the design of Smithson, is not only manifest from the terms of his will, but also from the fact, which has lately come to our knowledge, that he at first left his property to the Royal Society of London, for the very object embraced in this part of the plan. And what prouder monument could any man desire than the perpetual association of his name with a series of new truths ! This building and all its contents may be destroyed, but the volumes of the Smithsonian Contributions, distributed as they are among a thousand libraries, are as wide-spread and lasting as civilization itself.

During the past year a number of memoirs have been accepted for publication, and are either in the press, or are waiting the drawings to illustrate them, now in the hands of the engraver. It is the duty of the secretary, in accordance with the original plan of the Institution, to give a popular account of these memoirs in his annual report.

The first is a memoir by Dr. Asa Gray, professor of botany in Harvard University, consisting of an account of a collection of plants made by Mr. Charles Wright, in an expedition from Texas to El Paso, in the summer and autumn of 1849.

It was stated in my report for that year, that one hundred and fifty dollars had been subscribed on the part of the Institution toward the outfit of Mr. Wright, and that the plants collected by him would be submitted to Dr. Gray for examination and description. The memoir now mentioned is the result of this arrangement, though it also contains notices of plants gathered by other collectors in adjacent regions, especially by Dr. Wislizenus in the valley of the Rio Grande and Chihuahua; and by the lamented Dr. Gregg in the same district, and in the northern part of Mexico. This memoir is a good exposition of the character of the vegetation, and consequently of the climate, of the regions traversed.

Specimens of all the plants obtained by Mr. Wright belong to this Institution; and these, with sets collected by Fendler and Lindheimer, form the nucleus of an important and authentic North American herbarium.

Another paper on botany is by Dr. John Torrey, of the college of New Jersey, Princeton. It gives illustrations of the botany of California, and describes a number of new and interesting plants discovered by Colonel Frémont in his different explorations in that country.

Some of the plants collected by this intrepid traveller have been described in the appendix to his first and second report; but many are still unpublished. Of the collections made during his third expedition, no descriptions have been given, except that two or three of the new plants were briefly characterized by Dr. Gray, in order to secure priority of discovery.

In the memoir presented to the Institution, Dr. Torrey has given descriptions of a number of genera of new and remarkable plants, all collected by Col. Frémont in the passes and on the sides of the Serra Nevada. With regard to this publication Dr. Torrey remarks, that he had hoped that arrangements would have been made by the government of the United States for the publication of a general account of the botany of California; but as there is no immediate prospect of such a work being undertaken, this memoir, on some of the more interesting genera discovered by Col. Frémont, has been prepared for the Smithsonian Institution.

The drawings to illustrate this paper have been made, at the expense of the institution, by Mr. Isaac Sprague, of Cambridge, who, in the opinion of Dr. Torrey, ranks among the best botanical draughtsmen of our day.

The next paper presents the results of a series of observations made in the years 1845-6-7, to determine the dip, inclination and intensity of the magnetic force in several parts of the United States, by John Locke, M. D., professor of chemistry in the medical college of Ohio. The results presented in this paper are a continuation of a series derived from observations begun in 1837, and prosecuted annually for ten years. The first parts of the series have been published in the transactions of the American Philosophical Society, and have been incorporated by Col. Sabine, in his contributions to Terrestrial Magnetism. A part of the observations given in this memoir

were made at the expense and under the direction of the United States Coast Survey. Another portion was made in accordance with the direction of the Hon. Robert J. Walker, late Secretary of the Treasury, as a part of the investigations instituted for the exploration of the mineral lands belonging to the general government. This paper has been examined by competent judges, and recommended for publication in the Smithsonian Contributions, as an important addition to knowledge.

A paper has also been presented for publication by the executors of the late Doctor Troost, of Nashville. It consists of descriptions and drawings of a very numerous family of extinct zoophytes, to which the organic remain called the stone lily belongs. The vicinity of Nashville appears to be a remarkable locality for these remains, and the paper of Professor Troost describes several hundred species, of which two only have living representatives.

The memoir, however, is not in a condition to be published without revision, and additions to bring it up to the state of knowledge at the present time. This labor has been gratuitously undertaken by Professor Agassiz, of Cambridge, and Professor James Hall, of Albany. The collection of specimens, from which the drawings were made, is now in the possession of these gentlemen, and the memoir will be published as soon as the corrections and additions are made.

The next memoir is on the winds of the northern hemisphere, by Professor James Coffin. The design of this communication, in the words of the author, is "to answer the following questions, viz :

"1. What is the average direction in which the lower strata of the air moves over different regions of the northern hemisphere?

"2. What is the rate of progress in the mean direction as compared with the total distance travelled by the wind?

"3. What modifications do the mean direction and rate of progress undergo in the different months of the year?

"4. What is the direction of the deflecting forces that cause these modifications?

"5. What is the average relative force and velocity of winds from several points of the compass?

"6. How will the introduction or omission of the latter element affect the answer of the preceding questions?"

The data used in answering these questions have been collected with great labor, and consist of observations made at no less than five hundred and seventy-six different stations on land, and a large number taken during numerous voyages at sea. The field of observation includes a zone which extends from the equator to nearly the parallel of 85° of north latitude, and occupies a period, taken in the aggregate, of 2,800 years.

Several of the foregoing questions have been answered approximately by other writers, but never, it is believed, from as extensive an induction as is presented in this memoir.

This paper is illustrated by a number of maps and diagrams, which render its publication very expensive. It was presented to the Institution more than a year ago, but the appropriation for printing was not sufficient to allow of its publication at that time.

The Institution has also commenced the publication of an extended memoir, consisting of a grammar and lexicon of the Dakota language, the results of the joint labors, during eighteen years, of the Dakota mission,

assisted by the most intelligent natives of this tribe of Indians. The whole has been arranged, and placed in its present form, by the Rev. S. R. Riggs, of the American Board.

This work was prepared under the auspices of the Historical Society of Minnesota, and recommended by this association to the favorable attention of the Smithsonian Institution. It is designed to meet the requirements of the missionary in his labor of diffusing the light of religion and civilization among one of the most numerous and important tribes of Indians in the country. It also forms an interesting addition to ethnology, which will be highly prized by all devoted to this branch of knowledge.

A language is not originally a thing of man's device, or the result of conventional art, but the spontaneous production of human instinct, modified by the mental character, the physical conditions, and other peculiarities of the people or tribe among which it had its origin, or by whom it is used. It is subject to definite laws of formation and development, and is intimately connected with the history of the migrations and affiliations of the people by whom it is spoken, and hence becomes an object of interest to the student of the natural history of man.

In accordance with the policy of not expending the Smithsonian fund in doing with it what could be equally well done by other means, this memoir was first referred to the Bureau of Indian Affairs, with the hope that it might be adopted as a part of the materials of the volumes published under the direction of that bureau; but this was not found practicable, and the task was therefore undertaken by the Institution.

The memoir will occupy an entire volume, and would have been too much for our present income, had not about one-third of the whole cost of publication been promised by subscription from the members of the Historical Society of Minnesota and the American Board of Missions. The latter institution defrays the expenses of Mr. Riggs while he is engaged in superintending the passage of the work through the press. It is a pleasant circumstance that in this instance, as well as in many others, the organization of the Institution enables it to co-operate with other institutions, and to assist them in their labors of promoting knowledge.

This memoir, which is now in the press, was referred for critical examination to Professor Felton, of Cambridge, Massachusetts, and to Professor Turner, of New York. The latter has furnished us with a report on the importance of collecting information relative to the different dialects now in use among the Indians.

Dr. Joseph Leidy, of Philadelphia, has prepared a memoir for the Institution, accompanied by numerous illustrations, entitled "A Flora and Fauna of Animals." It is an elaborate history of a most remarkable series of plants, in many cases accompanied by parasitic animals, found growing, as an ordinary or natural condition, within the interior of the bodies of living animals. In some of the latter, it is stated, growing plants are never absent; and in a species of insects, viz: *Papulus Cornutus*, a forest of vegetation is always found covering the inner surface of the *ventriculus* or second stomach.

The plants of course are Cryptogamic, and are algoid in their character. Some are as long as half an inch, but usually they are very much smaller. They grow attached to the mucous membrane of the cavities in which they are found, and occasionally from the exterior covering of worms infesting the same cavities. Several genera and species of these plants are charac-

terized under the names of *Eutrobryus Elegans*, *E. attenuatus*, *Arthromitus cristatus*, *Cladophytum comatum* and *Corynocladus radiatus*.

The mode of growth and reproduction of several of the species has been carefully traced and fully illustrated by figures.

The researches are prefaced by some observations on the laws of parasitic life in general, which are presented in a highly philosophical manner, and entirely free from hypothesis—the whole forming one of the most remarkable papers on physiology which has ever been produced by our countrymen.

7 Lieutenant Charles Henry Davis, United States Navy, Superintendent of the American Nautical Almanac, has presented a memoir on the dynamic effects of the tides.

This memoir is a continuation of one presented by the author to the American Academy a few years ago, and is of much interest, not only in a scientific point of view, as connected with important geological changes, but also on account of the practical bearings upon the transformations which are constantly going on at the entrance of rivers, channels, and in the formation of headlands and promontories. Were our globe a perfect spheroid of revolution, surrounded by water of uniform depth, the tides of the ocean would consist of nearly perpendicular undulations of the particles of the liquid, and a mere translation of form, without a transference of matter. But, in the case of a globe of irregular surface, covered with water of varying depth, the oscillations of the ocean must constantly produce currents in definite directions which tend continually to change the position of the movable materials which are found at the bottom of the sea, particularly as we approach land. A part of the force of the particles of water forming the sinking swell of the wave, in the case of an obstruction to their free descent by a diminished depth, is expended in producing a current along the inclined plane of the surface leading to the shore.

Lieutenant Davis has entered with much ardor upon the new field of research, and after an examination of various parts of the shore of the United States, through a series of years, in which he was engaged on the coast survey, has succeeded in developing the laws of action which give rise to the changes before mentioned.

He finds that the tendency of the flood-tide is to transport the matter from the bottom of the ocean and deposit it on land. He is enabled to explain the character of the alluvial formations, to account for their peculiar shape, their comparative sizes, their accumulation, and to predict the results of certain combinations of circumstances on their future changes. The particular object of this memoir is to inquire into the mechanical operations of the tides, and the uses they may have served in the general economy of the globe in directing the loose materials of the earth's crust.

Smithsonian reports and other publications.—Since the last meeting of the Board of Regents, the report of Professor Jewett on the public libraries of the United States has been published and widely distributed. It is impossible to collect at once full and reliable accounts of all the libraries of the country, and this report is intended merely as a beginning, to be followed by others on the same subject. It has been sent to all the libraries of the United States, with the request that its deficiencies may be pointed out and additional materials furnished to render it more perfect. The great interest which is felt in this work is manifested by the amount of sta-

tistical information which has already been received in return for this volume.

A report has also been published on the recent improvements in the chemical arts. It is compiled from articles which have appeared during the last ten years in the various journals of science and the arts in the English, French and German languages. Though this report is chiefly intended to benefit the practical man, yet it will be found interesting to the general reader, as exhibiting the cotemporaneous advance of science and art, and the dependence of the latter on the former for the improvement of its most important processes.

The accounts given in the report alluded to do not consist of descriptions of methods which have been merely proposed and published without practical verification. On the contrary, care has been taken to select such as have been actually tried, or such as offer great probability of success from the well-established principles on which they are based.

The preparation of this report was entrusted to Professor James C. Booth, assayer of the United States mint at Philadelphia, who associated with himself Mr. Campbell Morfit, of Baltimore. The work has been executed in a manner highly creditable to the authors, and will, I doubt not, prove very acceptable to the public. Notes will be made of the new inventions of the same class, as they appear in the journals, so that in the course of a few years another report of a similar kind, or one which may be considered a continuation of this, can be published.

Copies, at the mere cost of printing, paper and commission, are offered for sale. The matter has been stereotyped, in order to supply all the demand, and to reproduce this member of the series, should the subject be continued.

The progress of the elaborate report on the forest trees of North America, mentioned in the last two reports, was for some time arrested by the absence of the author, Dr. Gray, in Europe. He has now, however, returned, and will resume the preparation of the drawings, as soon as the funds of the Institution will admit of the expenditure. This work has proved a more expensive undertaking than was at first anticipated, and can only be finished on the original plan, by extending the time of its publication over several years. It will form a valuable contribution to the botany and economical and ornamental arts of our country.

Dr. F. G. Melsheimer, of Dover, Pennsylvania, has presented to the Institution a catalogue of the Coleopterous insects of North America, with references to the principal places of description. This has been put to press, but progresses slowly on account of the great care necessary in correcting the proofs. When printed, it will be of great service to the cause of American entomology.

Besides the reports, other works are in progress, among which may be mentioned a small volume by Professor Baird, consisting of practical directions for the collection and preservation of specimens of Natural History. This will be illustrated with numerous figures, and issued as soon as the engravings can be procured. A part of the letter-press has been finished. It is especially designed for the use of travellers and officers of the Army and Navy who may be inclined to make collections for the Smithsonian Institution, but will be of general interest to the cultivators of Natural History.

A volume of tables of use in Meteorology and other branches of scientific observations, has been prepared, under the direction and at the expense of the

Institution, by Professor Arnold Guyot. The following are the contents of this volume, viz:

1. Thermometrical tables for the conversion of the scales of different thermometers into each other.

2. Hygrometrical tables giving the elastic force of vapor, the relative humidity &c.

3. Barometrical tables for the comparisons of different scales, reduction of observations to the freezing point, and correction for capillary action.

4. Hypsometrical tables for calculating altitudes by the barometer, and by the difference of the boiling point.

5. Tables of the corrections to be applied to the monthly means to obtain the true mean.

6. A set of miscellaneous tables frequently required in physical investigations.

These tables supply a desideratum in the English language, and will doubtless be highly prized by all engaged in physical research. It is proposed to extend their number so as to include a wider range of objects, and to publish them in parts to suit different purposes. Copies will be distributed with the quarto volumes of our publications, and sent to meteorological observers. The tables have been stereotyped and may therefore be offered for sale at a low rate.

Since the date of the last report, a number of separate memoirs have been bound together so as to form the second volume of the series of Smithsonian Contributions. The memoirs, an account of which has just been given, will be ready for distribution during 1852.

The second volume has been forwarded to all the colleges and other institutions specified in the rules adopted for the distribution of the Smithsonian publications in this country, and to all the first class libraries and principal literary and scientific societies abroad. Through the liberality of the members of the Senate of the United States and its officers, we have been enabled to send to our foreign correspondents, in addition to our own publications, copies of reports to Congress, and other works published at the expense of government. In return, the Institution has received a series of flattering acknowledgements and valuable presents, not only of the current numbers of transactions, but in several instances, of entire sets of all the volumes.

The promotion of knowledge is much retarded by the difficulties experienced in the way of a free intercourse between scientific and literary societies in different parts of the world. In carrying on the exchange of the Smithsonian volumes, it was necessary to appoint a number of agents. Some of these are American consuls, and other respectable individuals, who have undertaken in most cases to transact the business free of all charge, and in others for but little more than the actual expense incurred. These agencies being established, other exchanges could be carried on through them, and our means of conveyance, at the slight additional expense owing to the small increase of weight; and we have accordingly offered the privilege of sending and receiving small packages through our agency to institutions of learning, and in some cases to individuals who choose to avail themselves of it. The offer has been accepted by a number of institutions, and the result can not fail to prove highly beneficial, by promoting a more ready communion between the literature and science of this country and the world abroad.

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 100 copies of 1852

As a part of the same system, application was made through Sir Henry Bulwer, the British minister at Washington, for a remission of duties on packages intended for Great Britain, and we are informed that a permanent arrangement will probably be made, through the agency of the Royal Society, for the free passage through the English custom-house, of all packages from this Institution.

The Smithsonian exchanges are under the special charge of Professor Baird, who has been unwearied in his exertions to collect proper materials, and to reduce the whole to such order as will combine security with rapidity of transmission.

The system of exchange here described has no connection with that established between national governments by Mr. Vattemare. It is merely an extension of one which has been in operation on a small scale for nearly half a century between the American Philosophical Society and the American Academy on this side of the Atlantic, and the several scientific societies on the other.

Ancient Monuments.—The success of the first memoir published by the Smithsonian Institution has awakened much attention to American antiquities, and a number of communications have been submitted on this subject. Among these is one by Mr. William Pidgeon, of Virginia, who has spent a number of years in the exploration of mounds, and other ancient remains, on the upper branches of the Mississippi.

The results of his labors are of a very interesting character, though the facts contained in his memoir are too much mingled with the traditions received by him from the Indians, and with his own hypotheses, to be accepted as a part of the Smithsonian Contributions. After repeated conversations with Mr. Pidgeon, I was clearly of opinion that his researches ought to be given to the public in some way, in order that his statements might receive due attention, and be corroborated or disproved by other explorers; and I am pleased to be able to state that a gentleman of Washington has undertaken to arrange and edit these researches, and that they will be published in a separate volume for the benefit of the authors.

We have also received communications relative to mounds from Mr. Charles Whittlesey of Ohio, from Mr. Titian R. Peale of Washington, and Mr. William E. Guest of Ogdensburg, New York. The first of these may be considered as supplementary to the memoir of Messrs. Squier and Davis, describing works omitted in their survey. The second gives a plan and description of the mounds which formerly existed on the present site of St. Louis, Missouri, made during the visit of Major Long's party in 1849 to that country, on their way to the Rocky mountains. This sketch is now interesting on account of the fact that, in the rapid progress of improvement, these mounds have been nearly obliterated, and that they can only be preserved to science, as they existed more than thirty years ago, by this publication.

The third is an account, with drawings, of ancient works at Prescott, in Canada west. The great size of the remains of trees which occupy the ground, evince the long time which must have elapsed since these works were constructed, and the entire absence of stone pipes and arrow heads has induced the belief that they are of a higher antiquity than those in the Ohio valley.

The last two contributions will form a single memoir, the plates for which are partially completed.

But the most interesting circumstance connected with the study of the ancient remains of this country is a recent action of the American Antiquarian Society of Worcester, Massachusetts. This institution was founded in 1812 by the zeal and liberality of Isaiah Thomas, for the purpose of collecting and preserving such manuscripts, pamphlets and other articles as relate to the history of this country, and for the exploration and publication of its antiquities. It was at the expense of this society that the original researches of Mr. Atwater, on the mounds of the Ohio valley, were first published, and during the last two years the condition of its funds has again enabled it to take the field, and to direct its attention to the remarkable antiquities in the State of Wisconsin.

These antiquities, it is well known, consist of representations, on a gigantic scale, of birds, beasts and fishes, and though many of them have been surveyed, and accounts of them given in the memoir of Messrs. Squier and Davis, comparatively few of those which are said to exist have been explored or delineated. For this reason, the council of the society have engaged Mr. I. A. Lapham, an experienced engineer, to make explorations and surveys, and drawings of these mounds. He has been engaged in these operations for two seasons, and is now employed in making up an account of his labors.

To insure harmony of action in the cultivation of the wide field of research offered in the investigations of the ancient monuments of this country, the Antiquarian Society has agreed to present to the Smithsonian Institution the results of the explorations of Mr. Lapham for publication, and to reserve its limited funds for further explorations. The memoirs will be examined and revised by the society, and will be published under its auspices in the Smithsonian Contributions.

This arrangement is another pleasing evidence of the feeling with which the efforts of this Institution are regarded, and the willingness with which other institutions co-operate with it in the important work of promoting original knowledge.

Explorations, Researches, &c.—During the last year several minor explorations have been made in the line of natural history, partly at the expense of the Institution. The sum of fifty dollars was appropriated to Professor C. B. Adams, of Amherst College, to pay in part his expenses while making collections in the West Indies and Panama. For the sum advanced, an ample return has been made in new and rare specimens. Professor Baird and Mr. Charles Girard have also made explorations which have added to the collections of the Institution at a cost little beyond that of the expense of transportation.

In this connexion I may mention that Professor Baird has contributed the report on the vertebrate animals collected by Captain Stansbury in his expedition to the Salt Lake region, and facilities have been given at the Institution to a number of persons in making scientific reports to Congress.

A series of experiments also have been made in our laboratory by a commission appointed by government to examine the stone proposed for the extension of the Capitol. It is believed that the Institution may, in the aid it affords the government in scientific operations, more than repay all the obligation imposed by the acceptance of the Smithsonian trust.

It was mentioned in the last report, that the specimens which were procured by Mr. Culbertson from the Upper Missouri, had been referred to Dr. Joseph Leidy, of Philadelphia, for examination. He has since made a report (see Appendix) giving a brief statement of the results of his inves-

tigation. From this report it appears that the specimens are of much scientific interest, showing as they do, for the first time, the existence in this country of an eocene deposit, rivaling in the number of its species of extinct animals the celebrated basin of Paris.

Occultations.—It has been mentioned in the preceding reports, that lists of occultations, and tables of reductions, have been published, from 1848 to 1851, inclusive. The cost of the computation of these tables, as well as that of their publication for the past two years, was borne by the Institution, but since then Congress has ordered the establishment of an American Nautical Almanac; and as these tables will form a part of this ephemeris, Mr. Preston, the late Secretary of the Navy, directed that the expense of the computation should be defrayed from the appropriation for the Almanac, the printing and distribution to be at the charge of the Institution. A similar order has been given by the Hon. Wm. A. Graham, the present Secretary of the Navy, relative to the tables for 1851 and 1852.

The tables for 1852, are much extended by the introduction of occultations visible in every part of the earth. The form is also somewhat altered in order better to adapt it to the arrangement to be adopted by the Nautical Almanac.

The primary object of these tables is to facilitate the accurate determination of the longitude of places within the territory of the United States, and in this respect they have done good service, especially in the hands of the officers of the coast survey, and the explorers and surveyors of our new possessions on the coast of the Pacific. Their extension will render them useful to geographers in every part of the world. They have been computed, for the present and the last two years, under the direction of Lieut. Davis, the accomplished superintendent of the American Nautical Almanac. As soon as this work, which will be an honor to the country, is ready to be issued, the publication will be relinquished by the Smithsonian Institution.

We observe again, in this case, the policy of not expending the funds of the Institution, in doing what other means can accomplish.

It will be recollected that Mr. Sears C. Walker, astronomical assistant of the United States coast survey, prepared for the Smithsonian Transactions a memoir containing a determination of the true orbit of the planet Neptune, and that from this orbit, and the mathematical investigations of Professor Pierce, an ephemeris of Neptune was compiled. The ephemeris was prepared for the years 1848 and 1849, under the direction and at the expense of this Institution, but for the years 1850-'51-'52, it was computed under the superintendence of Lieutenant Davis, and at the expense of the appropriation for the Nautical Almanac, while the cost of printing and of the distribution has been defrayed by the Institution.

The ephemeris has been generally adopted by the principal astronomers of the world, and Professor Airy, the astronomer royal of Great Britain, has undertaken the labor, in his last volume of Greenwich Observations, of critically comparing his observations on the planet in the heavens with the predictions of the Smithsonian ephemeris. From these comparisons it is found that the ephemeris gives the position of the planet with a degree of precision not inferior to that with which the places of the planets longest known are calculated. The labors, therefore, of Mr. Walker on the elements, and Professor Pierce on the theory of the planet Neptune, have been crowned with complete success. It is proposed hereafter to collect all the

observations which may have been made on the planet, and compare them with the ephemeris, in order, if necessary, still further to correct the orbit.

Meteorology.—The general system of meteorology now in operation in this country, and described in the last report, has during the past year been continued and gradually extended. The instruments constructed under the direction of the Institution, with the aid of Professor Guyot, have been further improved, and some slight changes, indicated by experience, have been made to render them more convenient to the practical observer and they may now be considered not only equal in accuracy to the instruments of the best construction from abroad, but in some respects superior. They are furnished with the means of ready adjustment to the standard instruments, and being in every instance accurately compared before they are used, and the error corrected, the labor of inserting a correction in the journal is avoided. New efforts have also been made to obtain a still more accurate comparison between the standard barometer of this country and those of the more important European observatories. For this purpose a second standard barometer by Newman, compared with the standard of the Royal Society, and a barometer by Ernst, compared with the standard of the Paris observatory, were ordered at the expense of the Institution. By a long series of comparisons between these two instruments and others at Cambridge, (Massachusetts,) Toronto, (Canada West,) and Washington city, the object sought has, it is believed, been obtained. The thermometers also, constructed by Mr. Green, of New York, for the Institution, have been compared with European standards, and an important step has thus been made towards obtaining reliable results as to the absolute meteorological elements of the different parts of this continent.

It was stated in the last report that the regents of the university of New York had made an appropriation for supplying thirty-three academies in that State with instruments, and had given the establishment of the whole system in charge to this Institution. The State of Massachusetts has also made a similar appropriation and arrangement. During the past year the instruments for this State have been constructed, and a part of the stations established under the care of Professor Guyot.

At the last meeting of the American association, a report was made, and a series of resolutions adopted; (see appendix) for extending the system of observations with the same instruments to other parts of this continent. These resolutions directed the committee to memorialize Congress for aid in extending the system under the direction of this Institution; to request the Secretary of the Treasury to provide for making observations at the several light-houses to be established on the coast of California; to ask the surgeon-general to establish new stations at important points; to memorialize the other States of the Union to follow the example of New York and Massachusetts, and also the Canadian government to cooperate in the same enterprise.

What may be the result of the labors of the members of the committee to which this duty is entrusted, it is impossible to say. They can scarcely fail, however, to awaken a more general interest in the enterprise, and to receive a favorable response to some of the requests.

Since the date of the last report, the system particularly intended to investigate the nature of American storms, immediately under the care of this Institution, has been continued and improved, both in the number of the stations, and, in some degree, in the character of the instruments. An

appropriation was made to furnish a larger number of stations than previously with barometers and thermometers, by distributing these instruments in some cases entirely at the expense of the Institution, and in others by selling them to the observers at half their original cost; but the demand was so great, and the loss by breakage in transmitting the instruments so frequent, that the appropriations were soon exhausted, and until we can afford to devote a large sum to the object, and employ a special agent to transport the articles to their destination, it will be inadvisable to attempt anything more in this way.

Though the instruments employed by these observers in some cases can not be relied on for giving absolute results, yet they serve a good purpose in determining changes of pressure and temperature, and the returns give all the varying phases of the sky.

Thus far, the returns which have been received from this system have been arranged in folio volumes, and a beginning has been made in the way of deducing general conclusions from them, which may test the value of the observations and lead to their improvement by suggesting other objects of inquiry. The results already obtained give promise of interesting and valuable additions to our knowledge of the nature of the storms which traverse this continent during the winter seasons, and will probably serve to settle definitely several theoretical questions of much interest to the meteorologist.

The meteorological correspondence of the Institution is principally attended to by Professor Foreman, and the labor which this involves is sufficient to occupy the greater portion of his time. The letters received from this class of coöperators are not confined to the subject of meteorology, but include the whole domain of physical science. We consider it, as before observed, a duty in all such cases to give the information required; and if this is not in the possession of the officers connected with the Institution, it is procured from other sources.

For the details as to the management of the meteorological affairs of the Institution, see Professor Foreman's report on this subject.

Library and Collections.—It will be recollected that the income of the Institution was, by a compromise alluded to in a former report, to be divided into two equal parts, one part to be devoted to the formation of a museum, a library and a gallery of art, and the other to publications, researches and other active operations. The terms of this compromise have been rigidly adhered to, as will be seen by a reference to the general statement of accounts given in the last report. Up to the date of the appointment of Professor Baird, in July, 1850, the part of the income devoted to the collections was expended on the library, or on objects pertaining to it. Since that time, a portion has been devoted to the museum.

It is proper to remark that this compromise was founded upon another, namely, that the cost of the building and furniture should be limited to two hundred and fifty thousand dollars. But in order to the better security of the collections, the regents have since found it necessary to add, in round numbers, fifty thousand dollars to this sum, which must of course diminish the income which would otherwise have been devoted to the active operations.

It is evident that one spirit, if possible, should pervade the whole organization, and that the same policy should be adopted with reference to all parts of the plan. Among the maxims which have been acted upon, that

of occupying ground untenanted by other institutions, and of doing nothing with the funds which can be equally well accomplished by other means, has commended itself to the intelligent and reflecting portion of the public; and it has always appeared to me that this is as applicable to the formation of collections of books and specimens, as to the publications and other operations of the Institution.

With reference to the library, the idea ought never be entertained that the portion of the limited income of the Smithsonian fund which can be devoted to the purchase of books, will ever be sufficient to meet the wants of the American scholar. On the contrary, it is the duty of this Institution to increase those wants by pointing out new fields for exploration, and by stimulating other researches than those which are now cultivated. It is a part of that duty to make the value of libraries more generally known, and their want in this country more generally felt; to show in what branches of knowledge our libraries are most deficient; to point out the means by which those deficiencies can be supplied; to instruct the public in the best methods of procuring, arranging, cataloguing and preserving books; to give information as to the best form and construction of library buildings; in short, to do all which was originally intended in the plan of rendering the Institution a centre of bibliographical knowledge, to which the American scholar can refer for all information relative to books in general, and particularly to those in our own country. The libraries of the country must be supplied by the country itself; by the general government; by the State governments; by cities, towns and villages; and by wealthy and liberal individuals. It is to be hoped that in the restoration of the library of Congress, a foundation will be laid for a collection of books worthy of a government whose perpetuity principally depends on the intelligence of the people.

The proper management of books, and general instruction as to their use, are matters perhaps of more importance than their accumulation in any one place. "It is estimated that about twenty thousand volumes, including pamphlets, purporting to be additions to the sum of human knowledge, are published annually; and unless this mass be properly arranged, and the means furnished, by which its contents may be ascertained, literature and science will be overwhelmed by their own unwieldy bulk. The pile will begin to totter under its own weight, and all the additions we may heap upon it will tend to add to the extension of the base, without increasing the elevation and dignity of the edifice."

"One of the most important means of facilitating the use of libraries, particularly with reference to science, is well digested indexes of subjects, not merely referring to volumes or books, but to memoirs, papers, and parts of scientific transactions and systematic works." As an example of this, I would refer to the admirably arranged and valuable index to natural philosophy and the mechanical arts by Dr. Young. "If my library were on fire," said a celebrated author, "and I could save but one scientific book, it would be Dr. Young's index." This work comes down to 1807; and I know of no richer gift which could be bestowed upon the science of our own day than the continuation of this index to the present time. Every one who is desirous of enlarging the bounds of human knowledge should, in justice to himself, as well as to the public, be acquainted with what has previously been done in the same line, and this he will only be enabled to accomplish by the use of indexes of the kind above mentioned.

The most important operation during the past year relative to the library,

is the progress made by Professor Jewett in completing his plan of stereotyping catalogues with separate titles, described in the last report.

To reduce this plan to practice a series of original experiments were required, involving the expenditure of much time and labor. For this purpose, in preference to the usual method of stereotyping, a new one, invented by Mr. Josiah Warren, of Indiana, has been adopted on the recommendation of a committee to whom it was referred for examination. It is a fact well known to inventors, that however simple the theoretical plan of effecting a desired object may appear, a series of unforeseen difficulties must be encountered in the details, before the idea can be realized in actual results. These difficulties, in the present case, it is believed have been overcome, and the plan is now ready to be applied to the formation of a general and uniform catalogue of the libraries of the country. The course proposed is first to proceed with the catalogues of the library of the institution in accordance with the rules recommended by the commission appointed to report on this subject. This, stereotyped by the new process, may be distributed as a model for the other libraries which may adopt the plan. After all parts of the plan have thus been thoroughly tried, it will be desirable to commence on some large collection. The late accident which has happened to the library of Congress will induce the necessity of a new catalogue, and it is hoped that a liberal and enlightened policy will lead to the adoption of the Smithsonian plan. This will not only enable the government to issue, at a trifling expense, a new catalogue every year, with all the additions in their proper place, but also to assist in giving to the country an improved system of cataloguing, and facilitate the production of a general catalogue of all the libraries of the country.

Since the publication of the account of Mr. Jewett's plan of forming general catalogues, the invention has been claimed separately by two individuals in Europe. It is true, the want of such a plan has long been felt, and a general idea may have been conceived as to how it might be accomplished, but no attempts have been made to reduce it to practice, and indeed had they been made, they could not have succeeded, and would have done injury to the cause. The conditions necessary to success never before existed, and a premature attempt always tends to lessen public confidence in an enterprise, when the proper time for its actual accomplishment arrives. Besides this, there is a wide difference between the mere suggesting the possibility of a plan, and actually overcoming the difficulties which arise at every step in reducing it to practice.

With reference to the copyright law, something ought to be done to put the whole matter on a better footing. I repeat the assertion before made, that this law, as it now exists, imposes a tax on the Institution, without an adequate return. The great majority of the books received are such as are found in almost every public and private library; but very few of them would ever be purchased by the Institution, and are consequently dear at any price, even that of shelf-room and attendance, not to mention cost of transportation and of furnishing the certificates.

Granting the proposition that it is important a copy of every book originally published in this country should be somewhere preserved, it does not follow that the Smithsonian fund ought to be burdened with the expense of this charge.

If they should be preserved, it becomes the duty of Congress to provide for their care, as much as it does for that of the models of the Patent Office,

and no good reason can be assigned why the one should not be imposed upon the Institution as well as the other. Indeed, models are a species of books intended to convey ideas which printing cannot impart.

The objection to the present arrangement may be obviated by adopting the suggestion of Professor Jewett, that but one copy, instead of three, of each book, be sent to Washington for deposit, and that in place of the other two copies, a small fee be paid to the Institution, sufficient to defray all expenses; the maxim again being applied of not expending the funds in doing that which can and ought to be done by other means.

By reference to the report of the Librarian, it will be seen that the collection of books has continued to be increased by purchase, by copyright and by exchange. From the last mentioned source the Institution is obtaining a most valuable series of books of the highest interest to the scientific student, consisting principally of the transactions and proceedings of learned societies. In a few years, it is believed, as complete a collection of these will be gathered as it is possible to obtain.

The museum is to consist, according to the law of Congress, and the terms of the compromise, of "objects of art, of foreign and curious research and of natural history, of plants and geological and mineralogical specimens." It would, however, be unwise in the Institution to attempt the formation of full collections of all these objects, or, in other words, to form an establishment similar to that of the British museum. The whole income devoted to this object would be entirely inadequate. The portion of the main building appropriated to the museum consists of a single room two hundred feet long by fifty feet wide. This space may be entirely filled in the course of three years, without the purchase of a single article, if the means be adopted which present themselves at the seat of government for making collections. But when this space is filled the accumulation of specimens must cease, or an addition be made to the building, which, to harmonize with the present edifice, would involve a large expenditure. The question then arises, from what source is this money to be obtained? It cannot be derived from the annual income of the capital, for this would cripple the more important operations. It may be said that Congress will furnish the means; but this is relying on a very uncertain source, and the policy of applying to Congress for any aid is doubtful.

Furthermore, a promiscuous collection, embracing full sets of the objects above specified, is unnecessary in carrying out the plan of organization of the Institution.

For example, the organic remains brought from the upper Missouri by Culbertson, have been examined and reported on by Dr. Leidy, of Philadelphia, in that city; and the plants from California and Mexico have been referred to Dr. Torrey at Princeton, and to Dr. Gray at Cambridge. In this way, not only has the learning of these gentlemen been brought into requisition, but also their special cabinets rendered subservient to our use. The coöperation of the learning and talent, as well as the use of the libraries and collections of the whole country, is an essential feature of the plan and ought not to be lost sight of.

I would, however, distinctly disavow the intention of underrating the importance of collections in themselves. On the contrary, it ought to be the duty of the Smithsonian Institution to point out the means by which they may be made, and to aid in the work, to the extent of its ability, by

embracing all opportunities which may offer for procuring specimens for distribution, and by facilitating exchange and assisting explorations.

Though the formation of a general collection is neither within the means nor the province of the Institution, it is an object which ought to engage the attention of Congress. A general museum appears to be a necessary establishment at the seat of government of every civilized nation. The navy, the army, and the whole corps of commercial and diplomatic agents in foreign countries, all consider it their duty to send to the seat of government of their own nation, every object which may serve to improve or to interest the people. Indeed the government of the United States has already formed the nucleus of such a museum in the collections now in the Patent Office. An establishment of this kind can only be supported by government, and the proposition ought never to be encouraged of putting this duty on the limited though liberal bequest of a foreigner. The Smithsonian Institution will readily take the mental direction of an establishment of this kind, give plans for its organization and arrangement, provided it be requested to do so, and the means for effecting the object be liberally supplied.

I make these remarks with reference to the collections, because I am fully impressed with the fact that the tendency of the Institution will be to a statical condition, in which the income will be absorbed in the support and accommodation of objects of a doubtful or contingent value. There is even danger in receiving donations from individuals. The articles may be valuable in part, but may consist also of much which the institution cannot well afford to keep. Besides this, it is extremely difficult to discharge, acceptably, the duty of the curator of property thus acquired. Since the house-room and the income of the Institution for the accommodation and support of collections are limited, great care must be exercised in the choice of the articles, and preference given to those which are of importance in determining problems of interest, and which give promise of the ready production of new and interesting results.

For a detailed account of the additions to the museum during the past year, and the present state of the collections, I must refer to Professor Baird's report herewith presented.

In an appendix to this will be found a list of the donations, with the names of the donors alphabetically arranged. These consist principally of specimens not generally found in other collections, and though they may not be very attractive to ordinary visitors, the student of natural history will find in them much of interest.

The circular prepared by Professor Baird, describing the method of collecting and preparing specimens, and indicating objects especially desirable, has proved effective in procuring important contributions.

Among the objects which should be collected and preserved with care, are the remains of the specimens of the arts of the aboriginal inhabitants of this country, the contents of mounds, and the stone implements found on the surface of the earth. The implements and industrial products of the present tribes of Indians should also be gathered as the materials for the advance of the new and interesting science of ethnology. Of the contents of mounds, but a limited amount of specimens exist, and as these are not, like the spontaneous productions of nature, constantly in the process of reproduction, every article should be diligently sought for, and carefully preserved. Some additions have been made to the collections in this line.

The museum of natural history, besides plants and minerals, numbers eighteen hundred and fifty jars, containing specimens in spirits, of mammalia, reptiles, fishes, articulata, mollusca and radiata, amounting in all to twenty-five hundred species. Besides these, there are about nine hundred specimens of skulls and skeletons, and three thousand of skins of European and American birds.

Lectures.—In accordance with the suggestion contained in the act of incorporation of the Institution, courses of lectures have been given during the past year in the lecture-room of the Smithsonian building, and the reports of these lectures are generally copied in the public papers throughout the Union. Though the plan of diffusing knowledge by means of lectures is too restricted in its influence to meet fully the liberal views of the Smithsonian bequest, yet there is no place in the United States where such means will have a tendency to affect more minds and do more good than in the city of Washington, where persons from all parts of the country assemble during the sessions of Congress. It was supposed, at first, that the interest in these lectures would soon die away; but the experience of three years has indicated no tendency of this kind. This is in part owing to the constant influx of strangers and change of inhabitants. Besides this, there is in this city, in proportion to the whole number of inhabitants, a large number of intelligent persons with moderate salaries, who gladly avail themselves of the means of improvement offered by the gratuitous lectures of the Institution.

As an evidence of the high appreciation of the advantages which these lectures afford the citizens of Washington, I may mention that the corporation of the city has ordered, since the last meeting of the board, a bridge to be constructed over the canal at Tenth street, for the special accommodation of those who attend the evening instruction given at the Institution. This bridge, with a well-drained and well-lighted path across the public grounds, will afford a direct and comfortable approach to the building from a central point on Pennsylvania avenue.

In my last report I mentioned the fact that much complaint had been made through the public papers on account of the size of the lecture-room. It was the original intention of the Regents to construct a lecture-room in the main building, though, according to the plan proposed, the number of persons it would hold would scarcely have been greater than that now accommodated. This plan, however, was thought to be unsafe, because it was at first not proposed to fire-proof the interior; but since, an opposite course has been resolved upon, a large lecture-room may with safety be constructed in the main building, and the present lecture-room, having temporarily served the purpose, may be applied to other uses.

The proper construction of a lecture-room is, however, a problem of great difficulty, which in the present instance will be much enhanced by the form and peculiarities of the building. It must be well-adapted to sight, to sound, to ventilation and warming. A room might be constructed which would seat five thousand persons; but we know of none such, in every part of which an ordinary speaker can be distinctly heard. Too much must therefore not be expected with reference to the new lecture-room, though every endeavor will be made to render it as perfect as the conditions to which it is unavoidably subjected will allow.

The selection of the lecturers, and the arrangement of the courses, have been found, in some cases, an unpleasant and perplexing duty. The gen-

tllemen invited, as a general rule, have been men of high standing, and have been chosen on account of their reputation and moral worth, rather than with reference to their proficiency in the art of rhetoric. It is not the aim of the Institution in these lectures merely to please the ear, but to impart important truths which may be valued for their own sake.

Many applications have been made for the use of the lecture-room of the Institution for pay lectures and exhibitions of a private character, but these have in all cases been refused. The use of the room has, however, on several occasions been given to the faculty of Columbia College, and also for the meetings of the Teacher's Association of the District of Columbia. The organization of this association took place in the Smithsonian building in 1850, and its meetings have been regularly held in the lecture-room from that time to the present. It is believed that the spirit of the will of Smithson is properly consulted, in giving encouragement and rendering facilities to these meetings. The association has been kept up with much spirit, and I am sure that much good has resulted from the organization. It has served to cherish a feeling of harmony among the teachers, and to awaken a spirit of improvement relative to education and general knowledge.

The following is a list of the titles of lectures given before the Institution during the last session of Congress, with the names of the gentlemen by whom they were delivered :

A course of six lectures on History as a science, and a single one on Poetry, by Dr. Samuel H. Cox, of Brooklyn, New York.

Two lectures on Induction and Association, by Dr. John Ludlow, Provost of the University of Pennsylvania.

A course of five lectures on Entomology, and one on the Alps, by Rev. Dr. John G. Morris, of Baltimore, Maryland.

Two lectures on the History and the Forms of the English Language, by Professor W. C. Fowler, of Amherst, Massachusetts.

One lecture on the Architecture of the Middle Ages, by Dr. A. H. Vinton, of Boston.

Two lectures by Professor S. S. Haldeman, of Columbia, Pennsylvania, on the Mechanism of Speech, and its bearing upon the natural history of the human race.

Two lectures on Geology, by Dr. Benjamin Silliman, Sr., of Yale College, New Haven.

REPORT

OF

THE ASSISTANT SECRETARY

IN

CHARGE OF THE LIBRARY.

[Sanckerman Institution]

PRESENTED DECEMBER, 1851.

To the Secretary of the Smithsonian Institution :

SIR : In compliance with my official duty, I present to you, at this time, a report upon the affairs of the library during the year 1851.

The following table shows the number of books and other articles, which have been received since the last annual report :

Sources.	Books.	Pamphlets.	Engravings.	Maps.	Music.	Drawings.	Other articles.	Totals.
Purchases	414	5	.....	.....	.....	.....	.....	419
Donations	549	618	.....	.....	.....	.....	.....	1,167
Copy-rights	489	47	.....	9	573	.....	21	1,139
Total	1,452	670	.....	9	573	.....	21	2,725

Adding these sums to the aggregates of the last year, we obtain the following table, exhibiting the whole number of books and other articles at present belonging to the library, and the sources from which they have been received.

Sources.	Books.	Pamphlets.	Engravings.	Maps.	Music.	Drawings.	Other articles.	Totals.
Purchases	3,232	39	1,335	2	.....	.....	.....	4,608
Donations	1,176	1,937	48	27	.....	30	.....	3,218
Copy-rights	1,828	117	9	41	1,134	.....	67	3,196
Deposites	873	.....	.....	.....	.....	.....	.....	873
Total	7,109	2,093	1,392	70	1,134	30	67	11,895

The *purchases* have been few, and limited to works required for immediate use. Until the completion of our building and the appropriation of all the funds of the Institution to their permanent objects, the increase of the library from this source must continue to be small. The books which are needed for immediate use must of course be procured, if possible, at whatever cost; but with respect to all other works, it will doubtless be well to allow our funds to accumulate, in order to make a more considerate purchase when more favorable opportunities may occur.

The manner of buying books, a few at a time, in this country, is inordinately expensive. The saving by purchases through a competent agent at the book auctions and antiquarian shops of Europe, should not be reckoned by a *per centage*; it is rather the obtaining of books for a half or a quarter of the price which they would cost through the regular channels of the importation trade.

The number of books received by *exchange* has been considerably larger than it was during the preceding year. The books are, too, of a valuable class, consisting mostly of the current publications of learned societies in Europe and America. In some cases, complete sets of these publications

have been received. Doubtless, many more would be obtained, could more direct application be made for them.

The number of books received under the *copyright* law has gradually increased each year, but does not yet include more than half for which copyrights are secured in the United States. In my previous reports I have repeatedly alluded to this subject. It seems to me very important that it should receive the particular attention of the Board of Regents at the present time. Existing laws respecting the deposit of copies of books and other articles for which copyrights are secured, have failed almost entirely to fulfil the intentions of Congress. Authors and publishers complain of injustice. The demands of literature are not answered. The institutions intended to be benefited find the boon to be of very doubtful value. In short, no one of the parties interested is satisfied with the law in its present condition. The committee of the board, to whom was referred a special report upon this subject, presented by myself three years ago, was prevented, by the pressure of other business upon its members, from entering into an examination of the matter. I beg leave, therefore, to repeat at this time the recommendations of that report, with the grounds upon which they were founded.

The copyright laws of most nations require the delivery to the government, or to libraries designated by it, of a copy, or of several copies, of every work for which copyright is claimed. As far as I have been able to ascertain, in Saxony and in Portugal only one copy is demanded; in France, Austria, Russia, Bavaria, Denmark and Prussia two copies are required; in the Italian States generally, Holland, Belgium and the United States, three copies; in England, five copies; in Sweden, four or five copies. The number in several of these countries has varied at different periods.

This requirement had its origin in France, as far back as 1537. Its object is two-fold :

First, the deposit is considered necessary to *the complete protection of the author*. If his copyright be infringed, it may be important for him to be able to produce a certified copy of his work in order that it may be compared with the alleged counterfeit. In no other way can he be sure of finding such a copy than by making the deposit a condition of the copyright laws. It is like the model of a machine deposited in the patent office. Judge McLean, in delivering the opinion of the Supreme Court of the United States, in the case of *Wheaton versus Peters*, says: "The deposit of the book in the Department of State may be important to identify it at any future period, should the copyright be disputed, or an unfounded claim of authorship asserted."

The second reason for the requirement is *the public benefit*. The right of the government to demand copies of the work for this purpose, is a necessary consequence of the established theory of the copyright law.

The English and American courts agree in resting the right of an author to the exclusive privilege of printing and selling his book, upon the statute, and not upon the common law. "Congress," says Judge McLean, in delivering the opinion of the Supreme Court in the case of *Wheaton vs. Peters*, "instead of sanctioning an existing right, created it." He says, further, with respect to the right of the government to demand copies, "No one can deny that when the legislature are about to vest an exclusive right in the author or inventor, they have the power to prescribe the condition on which such right should be enjoyed."

It is manifest, however, that inasmuch as the law is intended to encourage the production of books, no conditions should be annexed to it which would be onerous to publishers; for such conditions would tend to defeat the very end proposed to be answered by the statute. Too many copies should not therefore be required. In England at one time eleven copies were demanded. It was made to appear that the law, with such conditions, operated as a discouragement to the publication of expensive works; it was, in consequence, changed. Five copies are now required, and a sum of money amounting to £2,800 a year is paid by the government to the other six libraries, in compensation for the loss of the privilege which they previously enjoyed.

The benefit of the deposit to the public is very great. It is universally allowed to be important for the interests of learning that in every country there should be at least one library where every book, pamphlet, or literary production of any kind, issued in the country should be carefully preserved. Now, it is utterly impossible to collect the whole in any other way than by making the deposit a condition to the vesting of the right of copy.*

The advantage of the deposit to learning seems to have been the sole motive for its first introduction, and not, as is sometimes supposed, the censorship. Francis the first, of France, in 1537, gives as the ground for requiring a copy for the royal library at Blois, that these books "will be veritable proofs of that praiseworthy restoration of letters occurring in our time through our diligence, care and labor, * * * and that recourse may be had to them if perchance the books should perish from the memory of man, or be varied from the true and original publication." (See Renouard, *Traité des Droits d'Auteurs*, T. i, p. 42.) No mention is made of their use for the purposes of the censorship, which, indeed, must be exercised before the printing of the book, and not afterwards. In another ordinance of the same year, explanatory to the one above cited, the king expressly declares, that it was not intended to affect the censorship in any way; and again, in an ordinance of 1538, appointing Nicobar, Greek printer, it is ordered that "a copy of every book printed shall be deposited in the royal library, to the end that should any calamities befall literature, posterity might there find a resource for repairing, in part, the loss of books." (Renouard *ut sup.*) The legal deposit, it is manifest, had its origin in an enlightened regard for learning, and not in any odious restrictions upon the liberty of the press.

* This point is discussed with great ability by Professor Libri in a letter to the chairman of the committee of the House of Commons on public libraries, dated May, 1849. The following extracts deserve particular attention. They occur in a work but rarely to be found in this country, and are strikingly appropriate and convincing. I hope, therefore, that I shall be excused for inserting them, notwithstanding their great length. (See report of the House of Commons on public libraries, for 1849, page 118 to 120.) "As I have already stated in my evidence, in my opinion, and as all educated men agree, it is necessary that in a great country there should be at least one library in which one may expect to find, as far as it is possible, all books which learned men, men who occupy themselves upon any subject whatever, and who cultivate one of the branches of human knowledge, may require to consult. Of these there is nothing useless, nothing ought to be neglected; the most insignificant in appearance, those which on their publication have attracted the least attention, sometimes become the source of valuable and unexpected information.

"You know better than me, sir, that it is in the fragments, now so rare and precious, of some alphabets, of some small grammars published for the use of schools about the middle of the fifteenth century, or in the letters distributed in Germany by the religious bodies commissioned to collect alms, that bibliographers now seek to discover the first process employed by the inventors of xylography and of typography. It is in a forgotten collection

It follows, then, from the facts and considerations which have been presented, that one copy of every book should be demanded of its author to be preserved in some public national library, both for his own sake and for that of the public. The legislature have the undoubted right to demand several copies as a condition to the granting of an exclusive right to the publication and sale of the book, provided that they do not demand so many as to impose a burden upon the publisher, and thus discourage instead of encourage the publication of books. The interest of the author and of the public (which when rightly understood can never be at variance) may alike require that more than one copy should be thus deposited; for if but one be deposited, and that be destroyed by fire or other casualty, the benefit of the deposit would be lost.

It ought to be remarked further, that the exacting of copies by the government implies an *obligation to preserve* them carefully, and to make them subservient to the purposes, both public and private, for which the deposit is made.

In this respect our own copyright law is defective. It requires the book to be deposited within three months after its publication, in the office of the clerk of the district in which the author resides. It also directs the clerk to transmit the copy to the State Department at Washington. It makes, however, no provision for the transmission, and it establishes no supervision. The consequence is, that not more than one half of the books for which copyrights are secured in the country ever reach the State Department, and no record is transmitted when the books are not sent.

Those books which are received are now kept in a room by themselves. They are, however, lent out to persons connected with the department; they are not properly recorded; no stamp is placed upon them for their identification; no catalogue is kept of them; they are not accessible for general use. Thus the benefit to the public is almost entirely lost.

The supreme court has decided that the deposit of the copy in the State Department is essential to a valid title; but in case of the loss of the certificate, the author has no certain means of establishing his claims. The benefit to the author is therefore lost (as in the case of Wheaton) or liable to be lost, though he may have fulfilled all the conditions of the law.

The requirement of a copy of every book and other article for which a copyright is secured, for the Smithsonian Institution, and also for the library of Congress, is made in the tenth section of the act of Congress establish-

of indifferent plates published at Venice, by Fausto Verantio, towards the end of the sixteenth century, that an engineer who interests himself in the history of the mechanical arts, might find the first diagram of iron suspension bridges.

“Nothing should be neglected: nothing is useless to whoever wishes thoroughly to study a subject. An astronomer who desires to study the motions peculiar to certain stars, requires to consult all the old books of astronomy, and even of astrology which appear the most replete with error. A chemist, a man who is engaged in the industrial arts, may still consult with profit certain works on alchemy, and even on magic. A legislator, a juriconsult needs sometimes to be acquainted with the laws, the ordinances which derive their origin from the most barbarous ages. But it is particularly for the biographer, for the historian, that it is necessary to prepare the largest field of inquiry, to amass the greatest quantity of materials. That is not only true as regards past times, but we ought to prepare the material for future students. Historical facts which appear the least important, the most insignificant anecdotes registered in a pamphlet, mentioned in a placard or in a song, may be connected, at a later period in an unforeseen manner, with events which acquire great importance, or with men who are distinguished in history by their genius, by their sudden elevation, or even by their crimes. We are not born celebrated; men become so; and when we desire to trace the history of those who have attained it, the inquirer is often obliged to

ing the Smithsonian Institution. No penalty is attached to a neglect of the requirement. It has therefore been generally held to be merely directory. In the case of *Jollie vs. Jaques*, (Southern District New York,) it was held that the delivery of copies to the two libraries was not a prerequisite to a title to copyright. By many also it is doubted whether, inasmuch as this enactment does not purport to be an amendment to the copyright law, a demand for the copy, in case it were refused, would be enforced by the courts.

Many publishers are not aware of the law; others regard it as unjust, and refuse to comply with it on that account; others, again, find compliance inconvenient, and, not considering it essential, neglect it. The consequence is, that not half the books to which we are entitled are received by us. Music being issued by fewer publishers, and being more easily sent, has generally been deposited; so also have labels of patent medicines. The labor of issuing certificates for these and recording them, is as great as for the books, whilst they have scarcely any appreciable and permanent value.

The books are frequently sent by mail, sometimes sealed, thus subjecting the Institution to letter postage upon them. The postmaster is directed to open such packages; but not unfrequently sealed letters are found within them, and thus the whole package is chargeable with letter rates. This indeed is the case not only with respect to books received under the copyright law, but also with respect to those received by donation. We have taken every means to make known the fact that we do not possess the franking privilege. We have invariably written to the publishers or donors of works who have made to us these expensive presents, and have several times received for reply that they were misinformed by the local postmaster, who had stated to them that the Smithsonian Institution was entitled to receive letters and packages without the payment of postage. It would seem to be inferred from the connection of the Smithsonian Institution with the government, that it of necessity possesses the franking privilege. We are thus subjected to great expense, which it is impossible for us to avoid, or materially to diminish.

The whole value of the books received during the year 1851 by the copyright clause of our charter has been estimated at four hundred and fifty dollars, which is perhaps a low estimate, taking no account of maps, music and other articles. The expenditure for postage and transportation of these, together with the time and labor spent in issuing certificates, may

pursue his researches in their most humble beginnings. Who would have imagined that the obscure author of a small pamphlet, '*Le Souper de Beaucaire*,' would subsequently become the Emperor Napoleon, and to write fully the life of the execrable Marat, one ought to have the very insignificant essays on physics that he published before the revolution. Nothing is too unimportant for whoever wishes thoroughly to study the literary or scientific history of a country, or for one who undertakes to trace the intellectual progress of eminent minds, or to inform himself in detail of the changes which have taken place in the institutions and in the manners of a nation. Without speaking of the commentaries or considerable additions which have been introduced in the various reprints of an author, the successive editions of the same work, which appear to resemble each other the most, are often distinguished from each other by peculiarities worthy of much attention.

"Amateurs of Italian literature seek with avidity for the various editions of the '*Orlando Furioso*,' and of the '*Jerusalemme Liberata*,' published in the lifetime of Ariosto and Tasso, at the present day; for these editions, generally rather imperfect, exhibit the labors of the authors, and the changes of style and composition, as well as the ameliorations of every kind, introduced by these two great poets in their works. It is by comparing these different editions that we learn how those great masters worked. In the same way, in the first successive editions published of those famous '*Lettres Provinciales*' of Pascal, which

be estimated at two hundred and twenty-five dollars. It will thus be seen that the privilege is, in its present condition, far from being so important as it was intended and supposed to be.

The same remarks apply probably with equal force to the subject as it concerns the library of Congress. It would seem, therefore, from this statement, that the law is *not* satisfactory to any of the parties affected by it. A thorough change of system, so far as the deposit of copies is concerned, seems to be required in order to give the security promised to authors, to relieve publishers from the trouble, expense and uncertainty attending their efforts to comply with the conditions of the present law, and to provide for the public benefit and the transmission to posterity of materials for the history of our own times.

The interests of all parties may be secured by a much simpler method than the present. After much consultation with those more particularly concerned, I have been led to believe that the following plan would prove generally acceptable:

1. To require a claim of copyright under the name of the proprietor, (to which should be subjoined his residence, with the date of the commencement of such claim,) to be printed upon the title-page or the reverse of the title of every copy of his work, as follows:

"Copyright in this work is claimed from and after the 6th of August, 1852, by me, as author, [or proprietor.]"

A——— B———,
Of Boston, Massachusetts.

2. To require the deposit of one or more copies of the book within one month after the date of the claim, (if the book be published in any of the States east of the Mississippi river,) and within three months if published west of the same. The books to be transmitted by mail or otherwise, at the risk and cost of the claimant of the copyright.

The person depositing the book should be entitled to a certificate of deposit, on the payment of a small fee, which certificate should be made receivable in all courts of justice as *prima facie* evidence of compliance with the conditions of the law.

The omission to deposit within the time specified should not invalidate the copyright, but every proprietor of copyright should be allowed to

in the seventeenth century struck so severe a blow at the society of the Jesuits, are to be met with when examined with care, remarkable differences in language and style, which reveal to us in some measure the secret of the composition of that illustrious writer.

"Only to borrow one single fact of this kind from the scientific history of England, it will suffice to recall to memory all the discussions which a slight alteration introduced in the lifetime of the author, in one of the editions of the admirable 'Principia' of Newton, has occasioned. Of many books published, more or less recently, the particulars are known, and the manager of a large library ought particularly to apply himself to procure those works, which, sooner or later, will be asked for and consulted with profit by men who desire to examine things thoroughly. This takes for granted that a man entrusted with the direction of such an undertaking, possesses a very extensive and profound science; it assumes also that he has at his disposition sufficient money to obtain, when the opportunity offers, all those books which are usually rare and expensive. He requires also sufficient room to place and arrange them in the best possible manner, in order that studious men may derive from them easily all desirable advantage. To a large library, to a metropolitan library, intended to supply all the intellectual requirements of a nation, certainly no limits can be assigned.

Without stopping here to name the rare books, the valuable editions, the typographical monuments of all kinds that a large library ought necessarily to contain to be complete, I

deposit the copy, or copies, at any time afterward, and previous to the commencement of an action for infringement of copyright, by paying the value of the book and ——— dollars. But if the book be demanded and refused, the copyright should be thereby forfeited.

It should be made obligatory that records be kept in the place of deposit; that the books be stamped so as to be easily and with certainty identified; and that they be restricted to the depository, unless required by a court of law.

The law would apply not only to books, but to maps and charts, music, engravings, &c., and should require that every copy so sent for security of copyright, should be perfect, and, if a book, well bound.

A monthly list of books thus deposited should be printed and distributed to booksellers and others. There are other details which would be necessary to be considered in preparing such a law, but they are easily adjusted after establishing the principles upon which the enactment is to be founded.

A law with the provisions above stated, would be much more satisfactory to publishers, because it would require less of them, and subject them to much less expense, and, more than all, would effect what the present law does not—security of copyright.

The question next arises, "Where shall the deposit of the book be made?" If but one copy be required, I beg leave to suggest that it could be most properly placed in the library of the Smithsonian Institution. The connexion of this establishment with the government is such as to render the deposit here peculiarly appropriate. We believe that it would be permanently more useful here, and better protected than in any other establishment. The rooms in the State Department appropriated to the purpose are now crowded to excess, and are, besides, needed for other purposes. The care of them occupies much of the time of a clerk, whose services can ill be spared. The clerks are continually changing, and hence it is impossible that any proper system for the care and usefulness of the books can be carried out. The business is entirely foreign to the department, and has, I am told, generally been considered as an incumbrance. It belongs more properly to a public library, and to one maintaining just the relation to the general government which the Smithsonian Institution does. This is the

shall ask your permission, sir, to point out, that if there are few old books, and even few editions already published of the same work, which ought not to find a place in a large metropolitan library, there are still fewer which are published at the present day, or which will be published within a certain period. The history of the past is nearly known, or at least will be, sooner or later, as far as the monuments and documents of every kind which have survived to the present day will allow. It is not the same thing for the history of the future; there every thing is vague, every thing is unknown, and we are absolutely ignorant, if, in the most insignificant book, in a pamphlet, in a song sold in the street, in a placard intended to announce the most common events, is to be found a fact, a circumstance, a name, a date, which one hundred years hence may excite interest by its connection in any manner, and which it is now impossible to foresee, with some singular event, or with some man become celebrated. It would be, however, impossible to exact from the manager of a library, that with the view of preparing himself for all the circumstances of the future, he should apply the funds at his command for the purchase of all books which appear annually in his country; besides, unless he devoted himself entirely to that, he could never know all the large and small books in published volumes, in livraisons (parts) or even in detached sheets, which might be published, not only in the capital, but in the most distant and obscure places in the provinces. It is this which, independently of any other consideration, renders the legal deposit so necessary; it is advisable, also, that whilst rendering it the least onerous possible to the publishers, by exacting only the number of copies strictly necessary for the object in view, all the measures which can render it really useful and of general application should be taken."

view taken of the matter in other countries. In England, the copy is required for the British Museum, (which sustains a relation to the British government similar to that which the Smithsonian Institution does to our own,) and not for the library of the House of Commons, or any library of the executive departments.

I am unable to say whether or not the deposit is desired by the guardians of the library of Congress. There is no doubt, however, that two or even three copies would be cheerfully granted by all publishers in this country, if they could be *sure that the purposes of the deposit would be answered*. The dissatisfaction which has hitherto been expressed has arisen entirely from the indefiniteness of the law, the difficulty of complying with it, and the doubt whether the deposit would be safely guarded, and rendered available for the object for which it is made.^X

Statistics of Libraries.—During the year, the report which I had the honor to present in January, 1850, upon the public libraries of the United States, has been printed. I continued to add to it, up to the time of its going to press, such new information as I was able to collect upon the various libraries; and the report constitutes a volume of more than two hundred pages. It has been widely distributed throughout the country. During the last three or four months we have received statements from upwards of a hundred libraries, more full and accurate than those which had before been presented. I hope to be able within a year or two to prepare a full account of these institutions.

The stereotyped Catalogue.—In my last report I presented, at considerable length, a plan for the stereotyping of catalogues by separate, movable titles, with a statement of the advantages which it was supposed would result from the system. The plan was referred to a commission of librarians and literary gentlemen, for the purpose of obtaining their opinion as to its value and feasibility. Their report was in all respects favorable, and I was authorized to proceed with the work. During the year I have bestowed much attention to the carrying out of the project.

Three methods of stereotyping had been devised, and it remained to be decided which of the three offered the greatest advantages. The first was by the electrotype process; the second by a modification of the common method of stereotyping; the third by a new process, patented by Mr. Josiah Warren, of Indiana. The last seemed to offer peculiar facilities, and promised to be much more economical than either of the other methods; but its applicability to our purposes had not been sufficiently tested. With the assistance of the patentee, I instituted a series of experiments in order to satisfy ourselves upon this point. The results were submitted to the judgment of a commission, who, after witnessing the process for manufacturing titles upon separate blocks, and carefully examining the work executed, recommended the adoption of this process in preference to the others.

These experiments were of course made with imperfect instruments. It was necessary before commencing the work in earnest to devise the best form of apparatus to be used. This required another extended series of experiments. These were completed as early as the month of April, but it was impossible to obtain the apparatus, ready for use, until the month of October. Everything connected with typography requires a great deal of exactness. It is very difficult to find workmen sufficiently skillful and careful to manufacture the machinery and apparatus. It was necessary also to instruct a workman in the manipulations of the art. Owing to delays from

these causes, it was not until the month of December that our office was in working order.

I present to you herewith a sheet printed from these titles, with some of the blocks. It will be seen from these specimens that the work, although executed by hands not well skilled in such employment, will compare not unfavorably with that produced by other stereotyping offices. Practice will give greater perfection. We can see no reason to doubt the mechanical practicability of the plan; it is now thought to be fully established. We may therefore direct attention to plans for carrying it practically and speedily into effect.

The course which I would propose for this purpose is, first to proceed with the catalogue of our own library, preparing it in accordance with the rules recommended by the commission, and stereotyping it as rapidly as is consistent with the perfection of the work. The first part of so extensive an undertaking should be done with great care; it will furnish a model for all subsequent labors. We cannot, therefore, at first advance with the same rapidity as will be practicable at a later period. Cataloguers must be trained; workmen must acquire skill; apparatus must be perfected.

After our own catalogue is completed, or nearly so, we may commence upon the catalogue of any other library which may be offered to us. The commissioners upon the catalogue suggested the importance of having the library of Congress first catalogued upon this plan. Since their report was written, the larger part of this collection has been lost by fire. Some considerable portion is, however, left, and undoubtedly measures will immediately be taken for replenishing the library. This would seem, then, to be a peculiarly appropriate time for presenting this matter formally to the proper authorities. It is extremely desirable that the catalogue of the new library should be constructed on a different plan from that heretofore followed—a plan which, however popular it may have been when it was adopted, has long since been generally abandoned. By entering into the system which we propose, Congress can save large sums of money in the reprinting of the catalogue, and can, at the same time, promote a great national work.

Respectfully submitted,

C. C. JEWETT, *Librarian.*

REPORT
OF
THE ASSISTANT SECRETARY
IN
CHARGE OF THE MUSEUM, &c.

To Joseph Henry, Esq., LL.D., Secretary of the Smithsonian Institution :

SIR: I herewith present to you the report of operations during the year 1851, in the departments severally assigned to my charge. These consist mainly of three: 1st, of publications; 2d, of distribution of volumes and exchanges; and 3d, of natural history; and I propose to take them up in the order here named.

1. PUBLICATIONS.

During the year 1851 the second volume of Smithsonian Contributions to Knowledge was published, containing four hundred and sixty-four pages of text, twenty-four plates, and eighty-two wood cuts. The printing was commenced in 1850 and completed in 1851; only a few, however, of the thirteen papers embraced in the volume had left the press before the commencement of the year, while more than one half the matter was not put into the printer's hands until after this period. The following list contains an enumeration of the individual memoirs of the volume, with the number of pages and illustrations to each. It will be remembered that each memoir is separately paged and indexed, and is thus distinct in itself, and that the volume is an aggregate of individual papers, with, however, a general introduction and title, as well as a general alphabetical index to all, in addition to the special index to each memoir. In order to facilitate the application of this general index, the plan used for congressional documents has been adopted for the third volume—namely, to assign beforehand to each paper its place in the series, and to have this number, in Roman letter, printed inside of the running head of each page.

List of Memoirs in Vol. II. Smithsonian Contributions to Knowledge.

1. Researches relative to the planet Neptune. By Sears C. Walker, Esq.; pp. 65.
2. On the Vocal Sounds of Laura Bridgeman, the blind deaf Mute at Boston, compared with the Elements of Phonetic Language. By Dr. Francis Lieber; pp. 32 and one plate.
- 3.* Microscopical Examination of Soundings made by the United States Coast Survey, off the Atlantic coast of the United States. By Professor J. W. Bailey; pp. 16 and one plate.
- 4.* Contributions to the Physical Geography of the United States. By Charles Ellet, Jr.; pp. 64, one plate and two wood cuts.
5. Mosasaurus, and the three allied new Genera, Holcodon, Conosaurus, and Amphoroosteus. By Robert W. Gibbs, M. D.; pp. 14 and three plates.
6. The Classification of Insects from embryological Data. By Professor L. Agassiz; pp. 28, one plate and eight wood cuts.
7. On the explosiveness of Nitre, with a view to elucidate its Agency in the explosion of July, 1845, in New York. By Dr. Robert Hare; pp. 20.
- 8.* Microscopical Observations made in South Carolina, Georgia, and Florida. By Professor J. W. Bailey; pp. 48 and three plates.
- 9.* Aboriginal Monuments of the State of New York, comprising the results of original surveys and explorations, with an illustrative appendix. By E. G. Squier; pp. 188, fourteen plates and seventy-two wood cuts.

* The asterisk added to the number indicates that the memoir was first issued in 1851.

10. Ephemeris of the planet Neptune for the date of the Lalande Observations of May 8 and 10, 1795, and for the oppositions of 1847, '48 and '49. By Sears C. Walker, Esq.; pp. 32.

11. Ephemeris of the planet Neptune for the year 1850. By Sears C. Walker, Esq.; pp. 10.

12.* Ephemeris of the planet Neptune for the year 1851. By Sears C. Walker, Esq.; pp. 10.

13.* Occultations visible in the United States during the year 1851. Computed by John Downes, Esq.; pp. 26.

The usual edition of each memoir consists of fifteen hundred copies, of which one thousand are retained for binding into volumes, and the remaining five hundred are distributed separately. Of papers printed in 1850 only twelve hundred and fifty copies were published, but the demand has become so great as to render it expedient to increase the number to fifteen hundred. In a single instance (that of Mr. Ellet's memoir) even five hundred extras were found inadequate, and an additional edition of one thousand was printed to meet the demand. The average number of copies, however, of the memoirs of the second volume is about fifteen hundred.

Several memoirs of the third volume of Smithsonian Contributions to Knowledge have been finished, and others are in so great a state of forwardness as to render its issue early in the year 1852 more than probable. The papers already completed, and partly distributed in a separate form, are:

1. Ephemeris of the planet Neptune for 1852. By Sears C. Walker, Esq.; pp. 10.

2. Occultations visible in the United States and other parts of the World in 1852. Computed by John Downes; pp. 34.

3. Monograph of the Fresh Water Cottoids of North America. By Charles Girard; pp. 80 and three plates.

The work of Professor Harvey, entitled *Nereis Boreali Americana*, or History of the Marine Algæ of North America, part i., *Melanospermeæ*, consisting of one hundred and fifty-two pages and twelve colored plates, is also completed, and only waiting for cases from the binder to be published.

The quarto memoirs for this third volume, now in press, are the following:

1. Description of Ancient Works in Ohio. By Charles Whittlesey.

2. Researches in Electrical Rheometry. By Professor A. Secchi.

3. *Plantæ Wrightianæ*. By Dr. Asa Gray.[‡]

4. *Plantæ Fremontianæ*. By Dr. John Torrey.

These will, it is hoped, all be completed in a short time. The six plates of corals to accompany Professor Agassiz's paper for the volume are also now ready.

The fourth volume of the fourth series is also in press, and will probably be issued simultaneously with the third, in the coming spring. It will consist entirely of a grammar and dictionary of the Dakota language, prepared by Rev. S. R. Riggs, and will occupy about four hundred pages.

Several plates for vol. 5 of Smithsonian Contributions are also finished.

Besides these works in quarto, several reports in octavo have been printed. The first is the report on public libraries, by Professor C. C. Jewett. This was printed by order of Congress, as an appendix to the annual report of the Smithsonian Institution. It contains two hundred and eight pages. The second report is by Messrs. Booth and Morfit, "on recent improvements

* The asterisk added to the number indicates that the memoir was first issued in 1851.

in the chemical arts." This embraces two hundred and twelve pages, and has been stereotyped.

The fifth annual report of the Smithsonian Institution (for 1850) did not appear until December, 1851. This consists of three hundred and twenty-five pages with, and one hundred and forty-four pages without the list of copyright books received by the Institution up to 1851.

The report of Dr. F. E. Melsheimer, on the Coleoptera of the United States, is in press and will appear some time in the course of 1852.

The collection of Barometrical, Thermometrical, Hypsometrical and other tables, by Professor Guyot, has been stereotyped, with the exception of a few pages, and will be ready in a few weeks. It will embrace about two hundred pages.

A small pamphlet of directions for making collections of Natural History has been printed and is nearly ready. This will serve as a substitute for the larger work on the same subject which is now ready for the press. A circular sheet of similar character has also been published and extensively distributed, as also a sheet of directions and lists for the observation and registry of periodical phenomena of animal and vegetable life.

2. DISTRIBUTION OF VOLUMES AND EXCHANGE.

During the past year the second volume of the Smithsonian Contributions to Knowledge issued from the press, after having been subjected to many unforeseen delays. The first copies received from the binder were sent to such domestic institutions as were on the list. Their distribution was effected very rapidly by forwarding those for each district to some central bookseller, and mailing letters of advice to each institution or library to be supplied, informing it of the fact. The distribution was accomplished with such promptness in this way, that in the course of a month or six weeks all the copies, with few exceptions, reached their destination. Acknowledgments have already been received for nearly all. The gentlemen to whom the Institution is mainly indebted for this service, performed gratuitously in all cases, are Messrs. J. P. Jewett & Co., Boston; Geo. P. Putnam, esq., New York; Lippincott, Grambo & Co., Philadelphia; John Russel, esq., Charleston; and H. W. Derby & Co., Cincinnati.

Nearly all the packages sent out, included copies of the History of the Indian tribes, by Messrs. Schoolcraft and Eastman, and presented by the Honorable Luke Lea, Commissioner of Indian Affairs, to such institutions, selected from the list of the Smithsonian Institution, as were judged entitled to them. A special acknowledgment direct to the Indian Bureau was requested.

The parcels for a few institutions in the South and West are still on hand, no favorable mode of transmission having yet presented itself. Most of these, however, will be taken charge of by members of Congress, and by them conveyed to their destination.

It was not until the beginning of July that copies enough were received to supply the foreign lists. By the 21st, however, all the parcels were in readiness, catalogued and boxed up for sending, and invoices of the contents of each prepared for transmission by mail direct. The lists used in the distribution of the first volume, considerably enlarged, and subjected to various corrections, will be found in the appendix.

Many of the scientific bodies of this country embraced the opportunity offered to them of sending their memoirs to European societies. The difficulties of scientific intercourse between the Institutions of Europe and America have in many instances been very great, resulting either in great delay in exchanging publications, or in an utter failure of the latter to reach their destination. The system adopted by the Smithsonian Institution is liable to no such objections, and the offer of its benefits to other institutions was gladly accepted. The principal bodies accepting the invitation were the American Academy of Arts and Sciences, Boston; the Boston Natural History Society; the Philadelphia Academy of Natural Sciences; the United States Coast Survey; the Washington Observatory, and others. The Commissioner of Indian Affairs, at the instance of the authors and of the Smithsonian Institution, took the same occasion to send copies of the History of the Indian tribes to about one hundred and fifty institutions in Europe, taken from the Smithsonian list. Numerous documents of scientific interest published by Congress were procured through the Senate document room, from members of Congress who relinquished their claim to extra copies, and in other ways. The Senate also assigned to the Institution three hundred copies of Foster and Whitney's report on the Copper lands of Lake Superior for foreign distribution. It is to be hoped that this act of liberality to scientific institutions abroad may be repeated in the case of all public documents of general interest.

The entire number of different addresses borne by the packages, five hundred in number, amounted to two hundred and ninety-one, of which two hundred and one were of institutions in correspondence with the Smithsonian Institution. The packages for France, Italy, Spain and Portugal, were sent for distribution to Hector Bossange, of Paris, and amounted to eighty-five. The remainder of continental Europe, except Greece and Turkey, was supplied with three hundred and thirteen packages, through Dr. John G. Flügel, United States consul, Leipzig; England, Scotland and Ireland, eighty-four packages, through Henry Stevens, London. Hon. George P. Marsh, minister resident at Constantinople, took charge of the copies for Greece, Turkey and Northern Africa. The parcels for the rest of Africa and for Asia were forwarded through the American Board of Foreign Missions, Boston, the Presbyterian Board of Foreign Missions, New York, and the American Colonization Society, Washington.

The whole mass occupied forty boxes of about six cubic feet capacity each, besides several separate bundles, and weighed 7920 pounds. These were distributed as follows:

To whom sent.	Institutions.	No. of parcels.	No. of boxes.	Cubic capacity.	Weight.
				<i>Feet.</i>	<i>Lbs.</i>
Dr. Flügel.....	81	313	20	120	3,960
H. Bossange.....	55	85	10	52 $\frac{2}{3}$	1,738
Mr. Stevens.....	47	84	8	42	1,336
Others.....	18	18	2	25 $\frac{1}{2}$	836
Total.....	201	500	40	240	7,920

The numbers of institutions refer only to those to which the Smithsonian publications were sent. The remaining ninety have not been classified for the present.

In addition to the parcels themselves, circulars (two hundred and ninety-one in number) were prepared for each address, and forwarded by mail. These contained a full statement of the purposes and wishes of the Institution. In each was a full invoice of everything sent, whether by the Institution or by others, with information of the circumstances connected with the transmission of the parcels. Although much of the matter of the circulars was printed, still the labor of making out the invoices was very great, involving, as it did in some instances, the writing of fifty, or even more, titles of books in a single letter.

As the import duty on books is much greater in England than on the Continent, application was made by yourself to the British government, through Sir Henry Bulwer, the British minister in Washington, for a remission of duty on packages directed to such Institutions in England as were embraced in the list of distribution which was enclosed to him. The ready assent to the request, and order of free admission was of essential service, as permitting the addition of much more matter to these packages than would have been possible had the duty of twelve shillings and six pence sterling per hundred weight been exacted. The parcels sent abroad have all reached their respective agents of distribution, and the great majority already arrived at their final places of destination. Every foreign mail brings letters of acknowledgement from institutions abroad for the donation, with expressions of admiration for what they are pleased to term the unexampled liberality and magnificence of the enterprise. In this connexion it may be proper to add that this Institution, as far as possible, transmits its packages, with their accompanying letters, free of any cost to the recipient.

The receipts of volumes from foreign institutions, in exchange for Smithsonian publications, have continued to be of great value. The report of last year mentioned the following as the entire amount up to January 1, 1852 :

Folio and quarto volumes-----	132
Octavo "-----	138
	<hr/>
Parts of volumes and tracts-----	270
	<hr/>
	608
	<hr/>
	878
	<hr/>

From January, 1851, to January, 1852 :

Folio and quarto volumes-----	96
Octavo-----	172
	<hr/>
Parts of volumes and tracts-----	267
	<hr/>
	342
	<hr/>
	609
	<hr/>

It may be well to mention that this does not include any returns made for the volumes sent last summer, none having yet arrived on the 31st of December, 1851. Nearly all those institutions which are mentioned in the last report as having failed to make returns or acknowledgments, have since done both.

An almost unique feature in the exchanges of the Institution consists in the number of academical publications received from almost all the universities of Europe. The series from many are very full, particularly for later years; and very few are to be found in any other American library. These works are generally of great value to the student.

In conclusion, I would remark that the Institution is greatly indebted to the gentlemen acting as agents in Europe for the efficiency of its system of foreign exchange. Its thanks are especially due to Dr. Flügel for his close and untiring attention in promoting the interests, not only of this Institution, but of American science and literature in general.

3. REPORT OF OPERATIONS IN NATURAL HISTORY.

This report I propose to present under the following subdivisions:

1. COLLECTIONS.
2. EXPLORATIONS.
3. REPORTS.
4. REGISTRY OF PERIODICAL PHENOMENA.
5. EXCHANGES.

In obedience to your suggestion, I have added to the details of operations in the line of Natural History of the Smithsonian Institution, such facts in regard to those of government, societies, and individuals in North America, as I deem to be of most importance. It must not, however, be considered as a complete exposition of the subject; still, imperfect as the sketch may be, it will, I hope, be acceptable to those who may not have at their command the information in possession of the Smithsonian Institution. In the March number of Silliman's Journal will be found a list of all works and articles relating to the natural history of North America, published during 1851, which will relieve the necessity of here going into the same detail.

1. COLLECTIONS.

Additions.—The additions to the Museum of the Smithsonian Institution during the year 1851, have been varied and valuable. They include numerous species which are entirely new to science, thus affording copious material for original investigation; while in those already described are the means of important comparisons. It is not in the more showy departments of Natural History that this growth is marked, but in the less conspicuous classes, orders and families, which from their comparative obscurity, have experienced unmerited neglect. It is well understood that the Smithsonian Institution does not enter upon ground already occupied, but endeavors to remedy the omissions of others. Hence it is that the collections of this Institution are not very attractive to the general visitor, in the absence of cases of mounted birds, mammalia, shells, &c., but the student of Natural History will find much that will be sought in vain elsewhere.

The circulars issued early in last spring, mentioning especial desiderata of the Institution, and giving brief hints for the preservation of specimens, have proved highly effectual in procuring many important contributions. A small pamphlet is now in press, shortly to be published, which will express more in detail the matter of the circular above referred to. The

more elaborate report on making collections and observations in natural history and geology is also ready for the press, and only waits the completion of some wood cuts.

In an appendix will be found the list of additions to the collection of the Institution, with the names of the donors, arranged alphabetically. The entire number of parcels received amounts to sixty-three, while that of individual specimens is very great. I propose in a few words to mention the points of especial interest in these collections, classifying the more prominent specimens according to the usual system.

Mammals.—Of North American species, the most conspicuous are two specimens of the big horn or Rocky Mountain sheep, *Ovis montana*, the one presented by Captain S. Van Vliet, the other by the Hon. J. Butterfield, commissioner of the General Land Office. The first one has been sent to the Academy of Natural Sciences of Philadelphia, to supply a desideratum there; and the two, with one brought in by Captain Stansbury and deposited in the national gallery, are the only specimens in public collections in the country. Various horns and skulls of American reindeer or caraboo, black tail deer, antelope, elk, &c., have been received, as also skulls of wolves, foxes, bears, &c. Some very valuable European mammalia have also been received from Mr. Sreenberg, of Elsinore, including skins of wolves, seals, arctic foxes, &c., and several skulls of the reindeer of Greenland. A magnificent collection of Scandinavian mammalia, sent last year by the Swedish Academy, at Stockholm, had not arrived at the end of the year, though daily expected. Numerous specimens of American rats, spermophiles, &c., have been received.

Birds.—A few birds only have been added to the American series, these consisting mainly of specimens procured in the Washington market, and prepared at the Institution. A beautiful series, however, of the nests and eggs of European species, with many skins, has been forwarded by Mr. Sturm.

Reptiles and fishes.—It is among these classes that the additions have been most numerous. The collections are principally from the great lakes, the Alleghany river, the southern coast, as well as from California, Oregon and New Mexico. It will be useless to mention any specially interesting objects, where so many exist. The classified lists in the appendix, however, will give a general idea of the extent and variety of this portion of the cabinet.

Invertebrates.—The donations of Mr. Pourtales and of Mr. Marsh, with the collections made by Mr. Girard, at Charleston, constitute the principal additions in the department of invertebrate zoology. Here, as among the vertebrata, are several rare and new species.

Plants.—An extensive series of the plants of Hungary, embracing many hundred species, was presented by Mr. Arthur Schott. This gentleman subsequently added a number of American species, like the former, gathered by himself.

Fossil remains.—A number of specimens of the fossil vertebrata from the Mauvaises Terres were presented by Captain Stewart Van Vliet. Dr. H. A. Prout, of St. Louis, has also enriched the collection. Remains of a mastodon, from Gloucester county, Virginia, have been received from Rev. Charles Mann and Captain Marchant. Some interesting specimens of fossil woods were presented by Major O. Cross.

Minerals and Geological specimens.—These have consisted of coals from the Island of Formosa, a slab of itacolumite from Brazil, gold quartz from California, &c. The Commissioner of the General Land Office has transferred to the Institution the valuable collection of minerals and fossils made by Dr. D. D. Owen in his survey of the northwest.

Ethnology.—J. W. Foster, Esq., has given to the Institution specimens of cloth found in an Indian mound; and the Hon. J. B. Balestier various articles of dress worn by native tribes in Borneo. Specimens of Indian pottery have also been presented by Mr. William E. Guest.

Present state of the collections.—During the past year the collections of specimens in alcohol have all been carefully assorted, separated and labelled as far as this could be done under a press of other duties. A large number of kegs have been emptied of their contents, and placed in jars. Other portions of the collections, the skins and skeletons of vertebrata and invertebrata have been kept in order, although little can be done for their arrangement and exhibition, until the completion of the museum room. At present it is considered best to keep the specimens boxed up, as far as can be done with safety. When the large room is finished but little time will be required to arrange and expose the specimens to the best advantage.

The following enumeration of the alcoholic preparations will convey some idea of the richness of this branch of the Smithsonian collections.

	No. of jars.	Total.
<i>Mammalia.</i>		
From various regions.....	36	36
<i>Reptiles.</i>		
From Jamaica	100	554
Bonaparte collection (European).....	57	
Other European specimens.....	53	
North American.....	332	
<i>Fishes.</i>		
From Jamaica	54	1,082
Constantinople and Egypt.....	31	
Germany	31	
Bonaparte collection (Europe).....	216	
North American.....	750	
<i>Articulata.</i>		
Crustacea.....	61	114
Apterous insects and larvæ	20	
Insects to be pinned hereafter.....	18	
Entozoa and Annelids.....	15	
<i>Mollusca.</i>		
Miscellaneous	20	20
<i>Radiata.</i>		
Medusæ.....	1	16
Holothuriæ.....	4	
Miscellaneous	11	
<i>Miscellaneous.</i>		
Embryos	35	65
Small skeletons	30	

The entire number of jars, therefore, varying in size from two gallons to one ounce, and now actually filled, exceeds 1850. But many of these contain more than one species, so that when all now on hand are properly assorted the number will amount nearly to 2,500. There are besides nearly twenty kegs and large vessels filled with duplicate specimens, for exchange, or with species too large for jars, together with several not yet assorted.

Besides the above there are about one hundred and sixty jars filled with new species of American fishes and reptiles, which are here temporarily for description.

Of the other collections, I will only mention in conclusion, that of skulls and skeletons of vertebrate animals, which embraces about nine hundred specimens, as also that of European and American birds in about three thousand specimens. Full lists of these, as of other portions of the museum, will be hereafter published.

2. EXPLORATIONS.

Explorations under patronage of the Smithsonian Institution.—The first of these is that of Professor C. B. Adams, of Amherst. This gentleman returned in the spring, from an excursion to Jamaica, and other places of the West Indies, and to Panama. He made very extensive collections in many departments of natural history, especially in conchology, herpetology and ichthyology. A very interesting collection in the two last mentioned divisions has been received from him, in return for an appropriation of fifty dollars towards defraying his expenses. The series contains many highly interesting species, some of them new to science.

Mr. Charles Girard, in May last, visited Charleston, and made various zoological collections of much interest, aided by facilities furnished by Dr. J. E. Holbrook, Dr. St. Julian Ravenel, and others. This collection, although not as extensive as might have been made at a more favorable season of the year, is still very important, not only on account of the known vertebrata and invertebrata, but also for embracing some undescribed species of fishes.

During a visit to Cincinnati in May, I embraced the opportunity to make a collection of the fishes of the Ohio river. In this I was fortunate to have the assistance of Dr. J. P. Kirtland, the eminent author of the "fishes of the Ohio river and its tributaries," who had there procured most of his species. Nearly all he had ever found in this locality, with few exceptions, were again obtained and identified by him. In August, again, I explored the tributaries of the Hudson below Albany, and subsequently Otsego lake, in each case richly rewarded by the result, and especially by learning of the existence in the latter lake of a *Lota*, the usual hydrographical associate of the *Coregonus*, or white fish.

3. REPORTS ON EXPLORATIONS.

To the Smithsonian Institution :

In the report presented to you by Dr. Joseph Leidy, upon the fossil remains submitted to him for examination, you will find a short statement of the character of these fossil vertebrata. The scientific interest attaching to these specimens is very great, as showing for the first time the existence in this country of an extensive eocene deposit, rivalling in the variety of its species of extinct animals the celebrated beds of the Paris basin. The discovery of an entirely new family of mammalia, embracing eight new genera, is one result of the examinations by Dr. Leidy. It will be remembered that these specimens were collected by Thaddeus Culbertson, Esq., in the summer of 1850. Since then an additional collection has been presented by Captain Stewart Van Vliet of the army, and several specimens kindly loaned by Dr. H. A. Prout, of St. Louis, all from the same locality. Some of the same genera and species, with a few not hitherto received by the Smithsonian Institution, were collected by Dr. Evans under the direction of Dr. David D. Owen, and will soon be published by the latter gentleman in his account of the geology of the northwest.

It is much to be desired that government may fit out an expedition for the complete exploration of this region, so interesting to the geologist and naturalist. Without some such aid it will be impossible to hope for a full development of these treasures for years to come. Besides the vertebrate

deposits on White river, there are others known in various parts of the basin of the upper Missouri, some belonging to the eocene and others to the cretaceous formations.

The species of cottoids belonging to the collection of the Smithsonian Institution have been worked up by Mr. Charles Girard in his memoir recently published in the third volume of Smithsonian Contributions to Knowledge. With but few exceptions, specimens of all the species described are now in the collection, several being entirely unique.

An account of the collection of plants made by Charles Wright in Texas and New Mexico is now in course of publication by the Institution, in a paper written by Dr. Asa Gray, entitled "*Plantæ Wrightianæ*." Dr. Torrey has also a paper on the new plants collected in California, by Col. J. C. Fremont. This, with the preceding, will appear in the third volume of Smithsonian Contributions to Knowledge.

To government.—The letter-press of the conchology of the United States Exploring Expedition, by Dr. A. A. Gould, has been printed during the past year under direction of Captain Wilkes and the Joint Library committee of Congress, although not yet issued. The atlas of plates is in an advanced state of forwardness. The volume on Meteorology, by Captain Wilkes, has also been published. The series of published results of the Expedition is as follows:

1. Narrative of the Expedition. By Captain Wilkes. 5 vols. 4to, and folio atlas.
2. Zoophytes. By Professor J. D. Dana. 1 vol. 4to, and atlas.
3. Philology. By Mr. Hale. 1 vol. 4to.
4. Races of Man. By Dr. C. Pickering. 1 vol. 4to.
5. Mammals and Birds. By Titian R. Peale. 1 vol. 4to.
6. Geology and Mineralogy. By Professor J. D. Dana. 1 vol. 4to, and atlas.
7. Meteorology. By Captain Wilkes. 1 vol. 4to.
8. Charts. 1 vol. folio.

Making eleven volumes quarto, and four folio volumes of plates.

Those still to appear are:

1. Conchology. By Dr. A. A. Gould.
2. Herpetology. By S. F. Baird and C. Girard.
3. Ichthyology. By Prof. L. Agassiz.
4. Crustacea. By Prof. J. D. Dana.
5. Medusæ. By Prof. J. D. Dana.
6. Echinoderms. By Prof. L. Agassiz.
7. Annelids.
8. Insects.
9. Ferns. By Mr. Breckenridge.
10. Fungi. By Messrs. Berkeley and Curtis.
11. Algæ. By Prof. J. W. Bailey.
12. Botany (Phanerogams.) By Drs. Torrey and Gray.
13. Mosses. By Mr. Sullivant.
14. Geographical Distribution of Species. By Dr. Charles Pickering.
15. Hydrography, Magnetism, Astronomy and Physics. By Capt. Wilkes.
16. Charts, vol. 2.

Several of the above titles may, however, be united into one volume.

Naturalists, generally, who have been watching the progress of this great national work, will learn with deep regret that all the undistributed copies

of the first seven volumes already published were destroyed in the same fire which consumed the library of Congress in December, 1851. This is the more melancholy, since but seventy copies were distributed. The issue of a second and enlarged edition is still more imperatively called for than before. This might be published at a moderate cost, by using less expensive paper and doing without colored plates. It is believed that one thousand copies each of the entire series of volumes of text already issued could be republished for less than fifteen thousand dollars.

The first volume of the History of the Indian Tribes of the United States, by Henry R. Schoolcraft, with illustrations by Captain S. Eastman, was published last winter. It contains a vast body of information useful to the historian, the ethnologist and the philologist, and is profusely illustrated with plates, forming the most magnificent work, with the exception of the reports of the Exploring Expedition, ever issued by our government. Several additional volumes, it is understood, will be published at short intervals.

The report of Lieutenant Simpson's expedition into the Navajo country, in New Mexico, published last summer, contains much matter of great interest to the ethnologist. Some interesting observations were also made on the natural history of the country, and specimens of a new species of *axolotl* procured, shortly to be described by myself, under the name of *Siredon lichenigerus*. This has erroneously been considered as a fish with legs. The report is accompanied by seventy-two plates. So great was the interest excited by this work, that it has been reprinted as a bookseller's speculation.

The valuable report of Messrs. Foster and Whitney, on the copper lands of Lake Superior, was also published last summer. The portion in relation to the iron lands and the country generally is now in press, and will shortly appear as a congressional document. It will be accompanied by numerous plates, and will contain palæontological matter of the highest interest.

4. REGISTRY OF PERIODICAL PHENOMENA.

In the spring of 1851, with the assistance of Dr. Torrey and Dr. Foreman, a list of plants to be observed for the period of flowering and fruiting was prepared. This was not issued until a comparatively late period of the season, when too late to be of much use to more southern observers. Copies were sent to all the meteorological observers reporting to the Institution, and to such other individuals as were supposed to be interested in the matter. From many of these returns have been received which have been embodied in your report; and it is hoped that by renewing the circular earlier in the season, a much fuller series of observations will be obtained in regard to the periodical phenomena of animals and plants, which will permit of many interesting generalizations in a natural history, as well as meteorological point of view. It is proposed to modify the first list by the omission of some species not of general distribution, and the addition of others, as well as by calling attention more particularly than before to the phenomena of animal life.

5. INTERNATIONAL SCIENTIFIC EXCHANGES.

The Smithsonian Institution may do great service to the cause of science, by serving as the medium through which applications for exchange or purchase of specimens of natural history between American and European collections may be interchanged. This does not necessarily involve an active part on regard to the specimens themselves, although in some instances such agency may be undertaken. There are many individuals in this country who have it in their power to procure duplicates of objects of natural history in their immediate vicinity, which they would gladly exchange for those from other localities, at home or abroad. By encouraging such to make known their desiderata and duplicates, and registering these systematically, indication might be immediately returned as to the best mode of procuring the one and disposing of the other, as well as of sending and receiving the parcels involved. In fact, numerous applications of the kind have been already received from institutions both in Europe and America, and an exchange satisfactory to both parties assured. Lists of persons making such applications might be published in the annual reports, and thus brought within the cognizance of all.

Very respectfully, your obedient servant.

SPENCER F. BAIRD.

APPENDIX A.

AN ACCOUNT OF NATURAL HISTORY EXPLORATIONS IN THE UNITED STATES, DURING 1851.

By PROF. SPENCER F. BAIRD.

Explorations under direction of the Topographical Bureau.—Natural science in America, almost equally with geographical, is under the greatest obligations to the Topographical Bureau, now under direction of Col. J. J. Abert, for additions to her domain. I need only mention in former years, the travels of Long, Naudy, Emory, Fremont, Abert, Simpson, &c. The expeditions returned in 1851, will, when their results are published to the world, bear ample witness of even an increasing zeal of the officers of this bureau for the betterance of natural science.

The first to be noticed is the expedition of Captain Howard Stansbury to the unknown region of the Great Salt Lake. This talented officer, assisted by Lieutenant Gannett, of the same corps, and Albert Carrington, esq., Salt Lake city, after having spent some months in their explorations, returned last winter with a rich stock of materials. Highly interesting collections of animals and plants, many of them quite new were obtained, and much light thrown upon the subject of geographical distribution. Collections of fossils and rocks were also made, sufficient to fast a ray of light upon the geology of this remote region. The same results of the expedition will be published during the present session of Congress, and will be accompanied by numerous plates of new animals, plants and fossil remains, as well as by maps and sketches of scenery. The report on the geology

and palæontology will be presented by Professor Hall; on the plants by Dr. Torrey; on the invertebrata by Professor S. S. Haldeman, and on the vertebrates by Mr. Girard and myself.

The survey of the Canadian fork of the Arkansas, under Lieutenant Woodruff and Captain Sitgreaves, was completed in the autumn of 1850, the party returning to Washington in the winter. Dr. Woodhouse, the surgeon of the expedition, and a naturalist of great ability, made many interesting collections; among them a new species of wolf, since characterized under the name of *Canis frustror*. Shortly after their return, Captain Sitgreaves and Dr. Woodhouse were again sent into the field to explore the Zuni river in California. This region, entirely unknown to naturalists, will no doubt afford to Dr. Woodhouse a rich harvest.

Department of the Interior.—The most important scientific exploration under the care of this department is connected with the survey of the boundary between the United States and Mexico. The western part of the survey across the peninsula of California was conducted by Major Emory, of the corps of topographical engineers. Officially connected with him, as surgeon and naturalist, was Dr. Parry, who made very extensive collections of plants, now in the hands of Dr. Torrey, and including many new species. Informally attached to Major Emory's party, for a considerable length of time, was Dr. John le Conte, the distinguished entomologist, who spent eighteen months in California, and made extensive zoological collections. The collections of Dr. Le Conte consist mainly of Coleopterous insects, of which at least one thousand species are new to science. All the other departments of zoology were, however, attended to, especially of herpetology, of which he procured the largest collection ever made on the Pacific coast. These are now in my hands for description.

The eastern part of the line of the Mexican boundary survey has also been zealously explored. The naturalists accompanying Col. J. D. Graham, chief of the scientific corps, Mr. J. H. Clark and Charles Wright, in their journey from Indianola to El Paso, and thence to the copper mines of the Gila, made very extensive collections, the former in zoology, the latter in botany, affording an excellent idea of the natural history of this region over a line of a thousand miles, and greatly exceeding in amount any ever made there before. The naturalists immediately connected with the party of Mr. Bartlett, the commissioner, (Messrs. Thurber and Bigelow, and others,) have also been active, especially in the field of botany and mineralogy, although but little beyond a small collection of plants has been sent in. Major Emory, on being assigned to this survey last summer, took with him Dr. Parry and Mr. Schott, both of whom will, no doubt, manifest afresh their zeal for natural history.

Land Office.—The explorations under the direction of the land office have mainly been in the departments of zoology and palæontology, although the others have not been neglected. Dr. D. D. Owen has completed the geological survey of Minnesota, Iowa and Wisconsin, and his report is now ready to be published. It includes many new and interesting fossils; among them several vertebrata from the Mauvaises Terres, and will constitute the most elaborate government report of the kind ever presented.

Messrs. Foster and Whitney have also completed their geological survey of Northern Michigan, and have the final results now in press. In working up the palæontology, they have had the able assistance of Professor James Hall. The plates and cuts to the report are all finished, and

nearly all the text has been set up, so that the whole will appear at no distant period.

Dr. Evans, formerly associated with Dr. Owen, has also been sent out by the land office on a geological examination of Oregon. During his passage out, he obtained and sent to the Land Office a magnificent specimen of the big horn, or Rocky Mountain sheep, (*Ovis montana*), which has been kindly presented to the Smithsonian Institution by the Commissioner of the General Land Office, Hon. J. Butterfield.

State Explorations.—The legislature of Pennsylvania, at its last session, appropriated forty thousand dollars for the completion of the geological survey of the State, commenced many years ago, but allowed to remain for a long time without any further appropriation. The sum above mentioned includes the cost of publishing the results in two quarto volumes, with a large map. Among the points of especial interest in this report will be a monograph of the coal plants of the United States, by Mr. Leo Lesquereaux.

North Carolina, almost the first in the field of geological exploration, has again authorized a general geological and natural history survey of the State, by Dr. E. Emmons, of Albany, well known for his services in a similar survey of the State of New York.

The State of Mississippi has also authorized a survey under direction of Colonel B. L. C. Wailes, of Washington, Mississippi, and Professor Millington, of Oxford, Mississippi. The appropriation for the survey consists of six thousand dollars per annum, one half devoted to the actual survey, the other towards maintaining the professorship of geology in the State university, of which Professor Millington is incumbent.

Illinois, too, has followed the example of her sister States, and commenced a survey under Dr. Norwood.

The survey of Alabama under Professor Tuomey is still in progress, as is also that of Canada under Mr. Logan.

The following is a list of the States, as nearly as can be ascertained, which have commenced geological surveys, with the names of the persons engaged. Most of these have been commenced long since, and appropriations for their final completion not granted. Several States have, however, shown their willingness to resume the surveys. Only a few final reports have, however, been published. The States of Missouri and Florida, it is believed, are the only ones which have not yet authorized surveys.

States.	Names.
New Brunswick.....	Mr. Gesner.....
Nova Scotia.....	Dr. C. T. Jackson and Francis Alger.....
Canada.....	Mr. Logan.....
Maine.....	Dr. Jackson.....
Rhode Island.....	Dr. Jackson.....
New Hampshire.....	Dr. Jackson.....
Vermont.....	Prof. C. B. Adams.....
Massachusetts.....	Pres. Hitchcock.....
New York.....	Profs. Hall, Emmons, Mather, Vanuxem, Beck and Dr. De Kay.....
New Jersey.....	Prof. H. D. Rogers.....
Pennsylvania.....	Prof. H. D. Rogers.....
Delaware.....	Prof. J. C. Booth.....
Maryland.....	Dr. Ducatel.....
Virginia.....	Prof. Wm. B. Rogers.....
North Carolina.....	Profs. D. Olmsted and E. Emmons.....
South Carolina.....	Prof. Tuomey.....
Alabama.....	Prof. Tuomey.....
Georgia.....	Profs. Olmsted and Cotting.....
Florida.....	.....
Mississippi.....	Col. B. L. C. Wailes and Prof. Millington.....
Tennessee.....	Dr. Troost.....
Louisiana.....	Prof. Forshey.....
Kentucky.....	Prof. Mather (reconnaissance only).....
Ohio.....	Prof. Mather.....
Indiana.....	Dr. D. D. Owen (reconnaissance).....
Missouri.....	.....
Michigan.....	Drs. Houghton and Jackson; Messrs. Foster and Whitney.....
Illinois.....	Dr. Norwood.....
Wisconsin.....	Dr. D. D. Owen.....
Minnesota.....	Dr. D. D. Owen.....
Iowa.....	Dr. D. D. Owen.....
Texas.....	Dr. F. Roemer.....

Explorations by individuals.—At the request of the superintendent of the coast survey, Professor Agassiz last winter visited the reefs of Florida, for the purpose of making such examinations of the coral formations as might furnish information of use to the survey. In this he was highly successful, as well as in the secondary object of making collections of natural history. Many new species of animals were added to the American fauna, especially of invertebrata, as annelida, &c. Numerous fishes were also obtained, including several undescribed, and in a species of *Spærodactylus* the presence of the reptilian family of geckotydeæ was for the first time determined in the United States. The geological results will be published as an appendix to the report of the superintendent of the coast survey for 1851.

Mr. L. F. Pourtales, while engaged on coast survey duty in Florida, paid especial attention to the radiata, and procured many species, some of which he has kindly presented to the Institution. Among them are *Holothuria*, *Synapta*, &c.

Mr. W. Stimpson, of Boston, last summer visited the coast of Maine, and made important collections in zoology. Many new species of molusca, radiata and annelida were obtained, and the existence of *Myxine* substantiated for the first time in North America, by the acquisition of sev-

eral species of this remarkable genus of fishes. Mr. Stimpson has since published some of his results in a special work. This gentleman is now with Professor Agassiz in Charleston, actively engaged in developing the natural history of the southern coast.

Lieutenant J. D. Kurtz, of the engineer corps, has also been active in procuring specimens of the recent and fossil shells of the coast of South Carolina. To him the institution is indebted for a fine collection, embracing most of the recent species, one hundred and ninety-four in number.

Dr. T. M. Brewer and Horace Storer, esq., of Boston, spent some weeks in New Brunswick last spring, engaged in collecting the birds with their eggs, as well as other animals of that region. The geographical distribution and habits of many of the former were finally settled by these gentlemen.

Colonel McCall, inspector general United States army, while on duty in New Mexico and Texas, made important additions to our knowledge of North American birds. He has since published a valuable report on the subject, in the Proceedings of the Academy of Natural Sciences. Captain McCown also procured many species of birds additional to our fauna, which have been described by Mr. Lawrence.

Mr. J. A. Lapham, of Milwaukee, Dr. De Haas, of Wheeling, and Wm. Pidgeon, of Iowa, have all been successfully engaged in exploring the mounds of the west.

I do not, of course, pretend here to give a complete record of all explorations, either by individuals or governments. Many others, no doubt, have been made, which have not come to the knowledge of the Institution. Still, if future reports of this kind be desired, pains will be taken to render them much fuller and more accurate than the present.

APPENDIX B.

LIST OF FOREIGN INSTITUTIONS TO WHICH VOLUME TWO OF SMITHSONIAN CONTRIBUTIONS TO KNOWLEDGE HAS BEEN SENT.

SWEDEN.

Lund—University Library.

Stockholm—Kongliga Sverska Vetenskaps Akademien.

Vitterhets Historie och Antiquitets Akademien.

Upsala—University Library.

Société Royale des Sciences à Upsal.

NORWAY.

Bergen—Bergen's Museum.

Christiania—The University Library.

ICELAND.

Reykjvík—Íslands Stíftisbókasafn.

DENMARK.

Copenhagen—Kongelige Nordiske Oldskrift Selskab.
 Kongelige Danske Videnskabernes Selskab.
 Kongelige Bibliothek.

RUSSIA.

Dorpat—Observatoire Impérial.
Moscow—Société Impériale des Naturalistes de Moscou.
St. Petersburg—Académie Impériale des Sciences.
 Imperial Public Library.
 Administration Impériale des Mines.
Pulkowa—Observatoire Impérial. ✓

HOLLAND.

Amsterdam—Académie des Sciences.
Haarlem—Hollandsche Maatschappij der Wetenschappen.
Leyden—University Library.
 Musée d'Histoire Naturelle.
Middleburg—Zeeuwsche Genootscap der Wetenschappen.
Rotterdam—Bataafsche Genootschap der proefondervindelijke Wijsbegeerte.
Utrecht—Utregtsch Genootschap van Kunsten en Wetenschappen.

GERMANY.

Berlin—Königlich-Preussische Akademie der Wissenschaften.
 Königliche Bibliothek.
 Königliches Museum.
 Gesellschaft Naturforschender Freunde.
Bonn—University Library.
Bremen—Stadt-Bibliothek.
Bonn—K. L. C. Akademie der Naturforscher.
Dresden—Königliche Bibliothek.
Erlangen—University Library.
Frankfurt am Main—Senckenbergische Naturforschende Gesellschaft.
Freiberg—Königliche-Sächsische Bergakademie.
Freiburg—University Library.
Giessen—University Library.
Greifswald—University Library.
Goettingen—Königliche Gesellschaft der Wissenschaften.
 University Library.
Halle—University Library.
Hamburg—Stadt-Bibliothek.
 University Library.
Hanover—Royal Library.
Heidelberg—University Library.
Jena—University Library.
Karlsruhe—Grossherzogliche Hofbibliothek.
Koenigsberg—University Library.
Leipzig—Stadt-Bibliothek.
 University Library.
 Königliche Sächsische Gesellschaft.
 Fürstliche Jablonowski'sche Gesellschaft.

Marburg—Gesellschaft zur Beförderung der Gesamten Naturwissenschaften.

University Library.

Munich—Königlich Bayerische Akademie der Wissenschaften.

Königliche Hof-und Staatsbibliothek.

Prague—University Library.

Königliche Böhmisches Gesellschaft der Wissenschaften.

Böhmisches Museum.

Pesth—University Library.

Ungarische Gelehrte Gesellschaft.

Stuttgart—Königliche Oeffentliche Bibliothek.

Verein für Vaterländische Naturkunde.

Tübingen—University Library.

Vienna—K. K. Akademie der Orientalischen Sprachen.

Kaiserliche Hofbibliothek.

University Library.

Kaiserliche Akademie der Wissenschaften.

K. K. Naturalien Kabinet.

Würzburg—University Library.

BELGIUM.

Bruges—Société des Sciences Naturelles.

Bruxelles—Académie Royale des Sciences, des Lettres et des Beaux-Arts.

Observatoire Royal.

Gand—University Library.

Liege—Société Royale des Sciences.

Louvain—Université Catholique.

FRANCE.

Angers—Société d'Agriculture, Sciences et Arts.

Bordeaux—Académie des Sciences, Belles-Lettres et Arts.

Société Linnéenne.

Caen—Académie des Sciences, Arts et Belles-Lettres.

Société Linnéenne de Normandie.

Dijon—Académie des Sciences, Arts et Belles-Lettres.

Lille—Société des Sciences, de l'Agriculture et des Arts.

Mende—Société d'Agriculture, Commerce, Sciences et Arts.

Lyon—Société d'Agriculture, d'Histoire Naturelle et des Arts Utiles.

Académie des Sciences, Belles-Lettres et Arts.

Société Linnéenne.

Marseille—Académie des Sciences, Lettres et Arts.

Metz—Académie Nationale.

Montpellier—Société Archéologique.

Orleans—Société des Sciences, Belles-Lettres et Arts.

Paris—L'Institut de France.

Société des Antiquaires.

“ Asiatique.

“ de Géographie.

“ Géologique de France.

“ Française de Statistique Universelle.

Société Philomatique.

“ de l'Ecole des Chartes.

Bibliothèque Nationale.

Bibliothèque du Jardin des Plantes.

L'Institut Historique.

L'Ecole des Mines.

Société Ethnologique.

Bibliothèque de la Ville de Paris.

Société Nationale et Centrale d'Agriculture.

Ministère de la Marine.

Strasbourg—Société des Sciences, Agriculture et Arts, du Bas Rhin.

Académie des Sciences Naturelles.

Toulouse—Académie des Sciences, Inscriptions et Belles-Lettres.

SWITZERLAND.

Basel—Naturforschende Gesellschaft.

Antiquarische Gesellschaft.

Bern—Schweizerische Gesellschaft für die Gesammten Naturwissenschaften.

Naturforschende Gesellschaft.

Geneve—Société de Physique et d'Histoire Naturelle.

Neuchatel—Société des Sciences Naturelles.

Zurich—Naturforschende Gesellschaft.

Gesellschaft für Vaterländische Alterthümer in Zurich.

ITALY.

Bologna—Istituto delle Scienze ed Arti Liberali.

Catania—Accademia Gioenia di Scienze Naturali.

Florence—Accademia del Cimento.

Biblioteca Magliabecchiana.

Lucca—Reale Accademia Lucchese di Scienze, Lettere ed Arti.

Milan—Biblioteca Brera, Imperiale Regio Istituto Lombardo di Scienze, Lettere ed Arti.

Modena—Società Italiana delle Scienze.

Naples—Reale Accademia delle Scienze, e Belle Lettere.

Padua—Imperiale Regia Accademia di Scienze, Lettere ed Arti.

Pisa—University Library.

Palermo—Royal Academy of Sciences.

Rome—Accademia Romana di Archeologia.

Biblioteca Vaticana.

Accademia Pontifica dei Nuovi Lincei.

Turin—Accademia Reale delle Scienze.

Venice.—Biblioteca Marciana.

PORTUGAL.

Lisbon—Academia Real dos Sciencias.

SPAIN.

Madrid—Real Academia Espanola.

“ “ de la Historia.

Academia Real de Ciencias.

GREAT BRITAIN AND IRELAND.

Belfast—Natural History and Philosophical Society.

Cambridge—Cambridge Philosophical Society.

University Library.

Observatory.

Penzance—Royal Geological Society of Cornwall.

Dublin—Dublin University Philosophical Society.

Royal Irish Academy.

Library of Trinity College.

Edinburg—Royal Society.

Royal Scottish Society of Arts.

Royal Observatory.

Library of Faculty of Advocates.

Society of Antiquaries of Scotland.

University Library.

Wernerian Society of Natural History.

Glasgow—University Library.

Greenwich—Royal Observatory.

London—Royal Society.

“ Astronomical Society.

“ Asiatic Society.

“ Geographical Society.

“ Institution.

Society of Antiquaries.

Society for the Encouragement of Arts, Manufactures and Commerce.

Linnean Society.

Geological Society.

Institution of Civil Engineers.

Zoological Society.

Entomological Society.

Statistical Society.

Microscopical Society.

Ethnological Society.

British Archæological Association.

British Museum.

Library of the House of Commons.

Horticultural Society.

Chemical Society.

Archæological Institute of Great Britain and Ireland.

Board of Admiralty.

Library of the Hon. the East India Company.

College of Physicians and Surgeons.

British Association.

Leeds—Philosophical and Literary Society.

Manchester—Literary and Philosophical Society.

Oxford—Bodleian Library.

Radcliffe Observatory.

St. Andrews—University Library.

GREECE.

Athens—University Library.

TURKEY.

Constantinople—Library of the Sultan.

AFRICA.

Grand Cairo—The Egyptian Society.

Liberia—Government Library.

ASIA.

Allahabad—Mission College.

Batavia—Bataviaasche Genootschap van Konsten en Wetenschappen.

Bombay—Royal Asiatic Society.

Geographical Society.

Calcutta—Asiatic Society.

Ceylon—Asiatic Society.

Hong Kong—Asiatic Society of China.

Madras—Literary Society.

Manilla—Royal Economical Society of the Philippine Islands.

WEST INDIES AND SOUTH AMERICA.

Bogota—Sociedad Economica de Amigos del Pais.

Caracas—Sociedad Economica de Amigos del Pais.

Habana—Real Sociedad Economica.

Rio Janeiro—Imperial Brazilian Historical Society.

Chili—Government Library.

APPENDIX C.

LIST OF ADDITIONS TO THE MUSEUM OF THE SMITHSONIAN INSTITUTION
DURING THE YEAR 1851.

1. Box of Coals from the Island of Formosa. *From the State Department.*
2. Slab of Itacolumite or flexible sandstone, from the province of Minas Geraes, Brazil. *From Charles De Selding, Esq.*
3. Two boxes containing specimens of European birds, reptiles, fishes, &c. *From F. Sturm, Esq.*
4. Skull and horns of Elk (*Elaphus canadensis*) from Bear river, Utah. Saddle used by Columbia river Indian women. *From Major O. Cross, U. S. A.*
5. Keg of fishes from Constantinople. *From Hon. Geo. P. Marsh.*
6. Fossil wood from great falls of the Columbia. Sedimentary deposits from Mineral Springs in Utah. *From Major O. Cross, U. S. A.*
7. Reptiles from California and Oregon. *From Dr. A. J. Skilton.*
8. Tooth of Fossil horse, from Ohio. Fossil *Cyathophyllum*, Dover, Tenn. *From Leo Lesquereaux, Esq.*
9. Cast of *Palæotherium Prouti*. *From Dr. H. A. Prout.*
10. Skull of Chamois, (*Capella rupicapra*) and of Roebuck, (*Cervus capreola*.) *From Wilhelm Heine, Esq.*

11. Dress and equipment of an Oorang Kayah or Bornese Warrior. *From Hon. J. B. Balestier.*
12. Specimens of Otsego Bass, (*Coregonus Otsego.*) *From Daniel B. Boden, Esq.*
13. Collection of plants from Hungary. Specimens of *Oestrus Columbæensis.* *From Arthur Schott, Esq.*
14. Five skulls and horns of deer, (*Cervus virginianus.*) *From J. S. Bowman, Esq.*
15. Gold and cinnabar ores from California. *From ———.*
- 16, 17. Two kegs of fishes from the Ohio river at Cincinnati, Ohio. *From S. F. Baird, Esq.*
- 18, 19. Two kegs of fishes, reptiles, &c., from Racine, Ohio. *From Dr. P. R. Hoy.*
20. Fossil bones from cave near Danville, Ky. *From Prof. G. C. Schaeffer.*
21. Fossil wood, from Lebanon, Ky. *From Prof. G. C. Schaeffer.*
22. Skeletons of elk (*Cervus canadensis*) and of fallow deer (*Cervus dama*) from Colonel Tuley's park, Clark Co., Va. *From Dr. C. B. R. Kennerly.*
23. Collection of fish, reptiles, invertebrata, &c., from near Charleston, S. C. *From Chas. Girard, Esq.*
24. Fishes and reptiles from French Creek, Pa. *From Prof. L. D. Williams.*
25. Fishes and reptiles from Jamaica. *From Prof. C. B. Adams.*
26. Reptiles collected in California. *From Dr. J. L. Le Conte.*
27. Skeleton of California vulture (*Cathartes Californianus.*) *From Dr. J. L. Le Conte.*
28. Fishes from river St. Lawrence. *From Dr. F. B. Hough.*
29. Eggs of guillemot. *From W. B. Blaney, Esq.*
30. Specimens of *Menobranthus*, &c., from Lake Erie. *From R. K. Winslow, Esq.*
31. Skin of bighorn (*Ovis montana*) male, and skull of female, from the Upper Missouri. *From the Hon. J. Butterfield.*
32. Fishes, &c., collected at Cooperstown, N. Y., Coxsackie, &c. *From S. F. Baird, Esq.*
33. Fossil vertebrata from the Mauvaises Terres; skulls of wolves; skin of bighorn, (*Ovis montana.*) *From Capt. S. Von Vliet, U. S. A.*
34. Fossil infusoria from Bermuda, &c. *From Professor J. W. Bailey.*
35. Jaws of *Scarus.* *From Fletcher Stayman, Esq.*
36. Cast of bones of fossil seal, from Richmond, Va. *From Dr. J. Wyman.*
37. Antlers of reindeer, (*Tarandus hastalis*), from Isle Royal. *From Col. J. W. Foster.*
38. Fishes from the vicinity of Reading, Pa. *From S. F. Baird, Esq.*
39. Specimen of "fish with legs," (*Siredon lichenoides*), from near Santa Fé. *From Dr. J. Leidy.*
40. Reptiles collected in Florida. *From Prof. J. W. Bailey.*
41. Fossil specimen of capelin, (*Mallotus*), in clay nodule, from the Ottawa river. *From W. E. Guest, Esq.*
42. Fishes from Ogdensburg, N. Y. *From W. E. Guest, Esq.*
43. Specimens of reptiles. *From Prof. E. Emmons.*
44. Keg of fishes from Florida. *From Prof. L. Agassiz.*
45. Specimen of Spanish mackarel, (*Cybium maculatum*), from the Potomac river.
46. Horns of Elk, (*Cervus canadensis*), from Clearfield co., Pa. *From Prof. S. S. Halde-*
man.
47. Keg of reptiles, fishes, &c., collected along the Nile. *From the Hon. Geo. P. Marsh.*
48. Specimen of Indian cloth from a mound in Ohio. *From Col. J. W. Foster.*

49. Specimen of horned frog, (*Phrynosoma cornutum*) from Arkansas. From Colonel Swords, U. S. A.
50. Four cases of reptiles, fishes, mammals, &c., from Greenland and Denmark. From Schack Steenberg, Esq.
51. Two kegs of fishes from Racine, Wisconsin. From Dr. P. R. Hoy.
52. Indian pottery from near Ogdensburg, N. Y. From Wm. E. Guest, Esq.
53. Remains of *Mastodon*, from Gloucester, Va. From Rev. Chas. Mann.
54. Remains of *Mastodon*, from Gloucester, Va. From Capt. Marchant.
55. Specimen of *Pelamis* from Siam. From Hon. J. B. Balestier.
56. Specimens of fishes from Moosehead Lake, Me. From Chas. Girard, Esq.
57. Duplicates of the Bonaparte collection of European reptiles and fishes. From the Academy of Natural Sciences.
58. Reptiles and fishes from Madrid, N. Y. From E. O. Dayton, Esq.
59. Minerals from New Brunswick. From Prof. Chipman.
60. Specimens of "*Leuciscus pygmaeus*" Dekay, from Rockland co., N. Y. From Jno. G. Bell, Esq.
61. Specimens of *Hippocampus* from Norfolk, Va. From Charles Lanman, Esq.
62. Keg of fishes and invertebrata from Key West, Florida. From L. F. Pourtales, Esq.
63. Three boxes Geological specimens, collected by Dr. D. D. Owen. From the Hon. J. Butterfield.

APPENDIX E.

REPORT UPON SOME FOSSIL MAMMALIA AND CHELONIA, FROM NEBRASKA.

By JOSEPH LEIDY, M. D.

Professor HENRY, *Secretary Smithsonian Institution* :

DEAR SIR: At your request I have prepared the following brief report upon the fossil remains of remarkable Mammalia and Chelonia of Nebraska Territory, a collection of which was transmitted to me by the Smithsonian Institution for investigation and the preparation of a special memoir.

The fossils were obtained in that portion of country known to the hunters and trappers under the name of "Manvaises Terres," or "Bad Lands." They were collected principally by Mr. Thaddeus Culbertson and Captain Stewart Van Vliet, U. S. A., and were procured for the cabinet of the Smithsonian Institution through the untiring zeal of Prof. Baird.

The characters of the remains indicate the locality from which they were derived to be an extensive lacustrine deposit of the eocene period.

The Mammalian remains consist of one existing genus, *Rhinoceros*; one genus known only as extinct, *Palæotherium*; and seven genera, *Archæotherium*, *Palæotherium*, *Oreodon*, *Merycoidodon*, *Eucrotaphus*, *Agriochærus* and *Arctodon*, which are new to Palæontology.

The Chelonian remains consist of the two existing genera *Testudo* and *Emys*.

Of *Rhinoceros* there are two species:

1. RHINOCEROS NEBRASKENSIS, *Leidy*: Proc. Acad. Nat. Sciences of Philadelphia, vol. v. p. 121. A species about the size of the *R. minutus*,

Cuvier. Established upon the greater portion of a face and lower jaw containing all the molares. There were also in the collection several fragments of jaws with teeth, and an entire tibia, of several other individuals of the same species.

2. RHINOCEROS OCCIDENTALIS, *Leidy: ib.* 119, 276. A species little more than half the size of *R. indicus*. Founded upon a fragment of the lower jaw with the posterior molar tooth, fragments of nine superior molares, two entire inferior molares, and fragments of several others.

Of Palæotherium three species are indicated:

1. PALÆOTHERIUM PROUTHI, *Owen, Norwood and Evans: ib.* 66; *Leidy: ib.* 122. This is an enormous species of Palæotherium far surpassing any previously described, and approaching the elephant or mastodon in size. It was first discovered and described* by Dr. Hiram A. Prout of St. Louis. The specific name was incidentally given as above referred.

2. PALÆOTHERIUM BAIRDII, *Leidy: Proc. Acad. Nat. Sciences, vol. v. p.* 122. A species about two-thirds the size of Palæotherium crassum, *Cuvier*, established upon a cranium with a portion of the face containing the true molares; and all the superior and inferior molares with portions of the jaws of a second individual; and several fragments of a lower jaw of a younger individual. The species is named in honor of Prof. S. F. Baird, of the Smithsonian Institution.

ARCHÆOTHERIUM is a remarkable genus of Pachydermata, which, as since ascertained by the inspection of a fragment of a face containing several true molares, in the possession of Dr. David D. Owen, of Indiana, is closely allied to Hyracotherium, *Owen*.

ARCHÆOTHERIUM MORTONI, *Leidy: ib.* 92. This species was founded on a fragment of a face containing the third and fourth premolar and the alveolus for the first true molar of the left side.

It is named in honor of Dr. S. G. Morton, late President of the Academy of Natural Sciences of Philadelphia.

PÆLUOTHERIUM, is a genus of Ruminantia allied to Dorcatherium, *Kaup*.

PÆLUOTHERIUM WILSONI, *Leidy: ib.* iii, 322. Established upon nearly the whole anterior portion of a cranium with the lower jaw, containing all the molares.

The species is named in honor of Dr. T. B. Wilson, of Philadelphia.

The genera Oreodon, Mérycoidodon, Eucrotaphus, and probably Agriochærus, form members of a family of Ruminant Pachyderms, characterized by the teeth forming a closed arch in both jaws with the following formula:

$$\text{inc. } \frac{3}{4} \text{ can. } \frac{1}{4} \text{ pre mol. } \frac{4}{3} \text{ mol. } \frac{3}{3}.$$

1. OREODON PRISCUM, *Leidy: ib.* v, 238; *ib.* 276. A species about the size of a common sheep, founded upon the greater portions of six crania, one of which upon one side contains all the teeth of both jaws in a perfectly entire condition. There are also in the collection fifteen fragments of jaws with teeth of several other individuals.

2. OREODON GRACILE, *Leidy: ib.* 239. A much smaller species than the preceding, founded upon the greater part of the superior and inferior maxillæ, containing the molares.

* Fragments of both sides of a lower jaw containing the posterior three molares, an entire superior molar and several fragments of others of one individual, and the posterior inferior molar (mutilated) of a second, have been kindly loaned by Dr. Prout for further description.

MERYCROIDODON CULBERTSONI, *Leidy: ib.* iv, 47. Closely allied to *Oreodon priscum* and about the same size, based upon a fragment of the lower jaw containing the true molares, and a fragment of the upper jaw with the posterior two molares.

EUCROTAPHUS JACKSONI, *Leidy: ib.* 92. Founded upon the posterior portion of a cranium about the size of that of *Oreodon priscum*, but differing from it in a remarkable degree in the very large size of the squamous portion of the temporal bones.

The species is named in honor of Dr. Samuel Jackson, Professor of the Institute of Medicine in the University of Pennsylvania.

AGRIPOCHÆRUS ANTIQUUS, *Leidy: ib.* 121. Established upon a large portion of the face and inferior maxilla; containing nearly all the molares, and four superior and two inferior molares of a second individual.

The remaining new genus is a carnivorous animal, closely allied to the existing genus *Ursus*. It is characterized from fragments of three teeth, under the name of *AUTODON*. *Pro. Acad. Nat. Sciences*, vol. v., p. 278. The species may be named *AUTODON VETUSTUM*, *Leidy*.

The Chelonian remains consist of three species of the genera *Testudo* and *Emys*.

1. *TESTUDO LATA*, *Leidy: Pro. Acad. Nat. Sciences*, vol. v., p. 173. A large species, founded upon a specimen consisting of a great portion of the carapace and sternum, broken into two pieces. In its perfect condition, its length has been about two feet, and its breadth about twenty inches.

1. *EMYS HEMISPHERICA*, *Leidy: Pro. Acad. Nat. Sciences*, vol. v., p. 173. Established upon a specimen consisting of about one-third of the carapace and four-fifths of the sternum. When perfect, it has been about nine and a half inches in length, and seven and a half in breadth.

2. *EMYS NEBRASCENSIS*, *Leidy: ib.* 172. *STYLEMYS NEBRASCENSIS*, *ib.* 172. A species established upon the greater portions of two individuals. In the entire condition, it has been about seven inches long, and five and three-fourths broad.

JOSEPH LEIDY,

REPORT
OF
THE GENERAL ASSISTANT,
WITH REFERENCE TO THE
METEOROLOGICAL CORRESPONDENCE.

TO JOSEPH HENRY, LL.D.,

Secretary of the Smithsonian Institution :

SIR : I herewith present to you the report of operations during the year 1851, relative to the meteorological correspondence entrusted to my charge as General Assistant.

Very respectfully, your obedient servant,

E. FOREMAN.

METEOROLOGICAL CORRESPONDENCE.

The plan adopted for obtaining a corps of meteorological observers for the Smithsonian Institution consisted in issuing a circular letter of date November 1, 1848, which was signed by the Secretary and Prof. Espy, requesting the co-operation of those interested in the subject. This was distributed by members of Congress during the winter of 1848-9, to such of their constituents as were judged by them to be favorable to the undertaking.

A large number of communications in reply accumulated during the winter, and in February, 1849, the correspondence was arranged, the necessary answers prepared and sent with blank forms for the registers of the weather, and a copy of the annual report of 1849, which contained communications on meteorology. An address book for this special correspondence was also prepared.

The number of persons who offered their assistance at that time, or from whom we were informed that co-operation might be expected, may be stated as follows :

Maine.....	23	Alabama.....	14
New Hampshire.....	8	Mississippi.....	17
Vermont.....	7	Louisiana.....	4
Massachusetts.....	18	Texas.....	3
Rhode Island.....	5	Arkansas.....	1
Connecticut.....	10	Missouri.....	5
New York.....	56	Tennessee.....	11
New Jersey.....	12	Kentucky.....	12
Pennsylvania.....	55	Ohio.....	27
Delaware.....	2	Michigan.....	10
Maryland.....	11	Indiana.....	16
Virginia.....	22	Illinois.....	11
North Carolina.....	8	Iowa.....	4
South Carolina.....	4	Wisconsin.....	14
Georgia.....	7		
Florida.....	5	Total.....	412

Of this number, one hundred and forty-three were correspondents of Prof. Espy, who had been previously engaged in collecting observations under the direction of the Navy Department. To these also a circular and documents were sent, as it was desirable to retain the assistance of practiced observers. From nineteen of this number we have received records of observations, and ten of them still continue to make monthly returns to the Institution.

Offers of service are continually made, and in accordance with our plan and at the request of the applicant, meteorological blank forms and directions are invariably sent. The regular conduct of a journal, however, re-

quiring more perseverance and punctuality than most persons are willing to bestow, we have a very large number of applications of this kind which have proved barren of any results. The whole number of the present corps of observers to the end of December, 1851, is 155, the larger part of whom have contributed their observations from March, 1849, when the system commenced, a period of nearly three years. They are distributed over the various States as follows:

Maine.....	8	Mississippi.....	2
New Hampshire.....	4	Louisiana.....	1
Vermont.....	3	Texas.....	3
Massachusetts.....	7	Arkansas.....	0
Rhode Island.....	1	Missouri.....	1
Connecticut.....	3	Tennessee.....	4
New York.....	19	Kentucky.....	4
Pennsylvania.....	15	Ohio.....	10
Delaware.....	1	Michigan.....	6
New Jersey.....	3	Indiana.....	4
Maryland.....	5	Illinois.....	2
Virginia.....	11	Iowa.....	3
North Carolina.....	2	Wisconsin.....	19
South Carolina.....	3	Minnesota.....	2
Georgia.....	2	Oregon.....	1
Florida.....	3		
Alabama.....	5	Total.....	155

This list is increasing partly by voluntary offers and partly from a request made to the observers in the Southern and Western States to enlist others in the work, in their respective districts. The number is not permitted to diminish, if it can be avoided, by the discontinuance of an observer. When such is reported to us as probable, the retiring observer is uniformly requested to place the register in the hands of a suitable successor, and keep the chain of observations unbroken. The increase has been marked within a few months past, and it is satisfactory to note that the greater number come from the Southern and Western States, in which our observers have heretofore been but comparatively few. From the occasional discontinuance of some, and the frequent additions of others, our list is constantly fluctuating in effective strength; the numerical force can be known, however, at any time.

It is proper to state that for extra limital stations we have an observer each in Nova Scotia, Canada West, New Grenada and Bermuda, from all of which manuscript registers are received, except from the last. His excellency Charles Elliot, governor of Bermuda, has ordered that the Royal Gazette, containing a weekly register of the weather in Bermuda, be regularly sent to this Institution.

Observations have been received at the Smithsonian Institution, during the year 1851, from the following persons:

*List of persons from whom meteorological observations have been received
at the Smithsonian Institution, during the year 1851.*

State.	Name.	Residence.
MAINE -----	Rev. Samuel H. Merrill----	Old Town.
	George B. Barrows-----	Fryeburg.
	James G. Garland-----	Biddeford.
	Rufus Buck -----	Bucksport.
	S. A. Eveleth-----	Windham.
	Joshua Bartlett -----	Whitehead.
	J. D. Parker-----	Steuben.
	Christopher Prince-----	Thomaston.
NEW HAMPSHIRE ----	Dr. William Prescott-----	Concord.
	Robert C. Mack-----	Londonderry.
	Rev. Levi W. Leonard-----	Dublin.
VERMONT -----	Rev. Zadock Thompson----	Burlington.
	Charles C. Frost-----	Brattleboro.
	D. P. Thompson-----	Montpelier.
	Prof. W. H. Parker-----	Middlebury.
	R. M. Manley-----	Randolph.
MASSACHUSETTS-----	Jacob Batchelder-----	Lynn.
	Charles J. Gilliss-----	Lowell.
	Samuel F. Haven-----	Worcester.
	William Bacon-----	Richmond.
	Prof. E. S. Snell-----	Amherst.
	Amasa Holcomb-----	Southwick.
	John G. Metcalf-----	Mendon.
	Thomas Bailey-----	New Bedford.
	Henry Rice-----	N. Attleboro.
.	Martin N. Root-----	Byfield.
	C. M. Freeman-----	Williamstown.
RHODE ISLAND-----	Prof. A. Caswell-----	Providence.
CONNECTICUT -----	Rev. T. L. Edwards-----	New London.
	Prof. Aug. W. Smith-----	Middletown.
	Prof. E. Cutler-----	New Haven.
	M. H. Cobb-----	North Colebrook.
	Dr. Ovid Plumb-----	Salisbury.
	R. H. Phelps-----	Windsor.
NEW YORK -----	Chas. H. Hoadley-----	Hartford.
	L. F. Munger-----	Albion.
	C. F. Maurice-----	Sing Sing.
	E. A. Dayton-----	Madrid.

List—Continued.

State.	Name.	Residence.
NEW YORK—Cont'd.	Dr. F. B. Hough-----	Somerville.
	John Bowman-----	Van Buren.
	Walter D. Yale-----	Honesville.
	J. E. Breed-----	Smithville.
	E. N. Byram-----	Sag Harbor.
	John Lefferts-----	Lodi.
	James M. Tower-----	Waterville.
	Prof. O. W. Morris-----	New York.
	John P. Fairchild-----	Seneca Falls.
	John F. Jenkins-----	Salem Centre.
	Albert Hosmer-----	Buffalo.
	Moses Lane-----	Springville.
	J. W. Hart-----	Oswego.
	Mandren Linus-----	Sackett's Harbor.
	James N. Ball-----	North Nassau.
	James B. Trevor-----	Lockport.
	L. A. Beardsley-----	South Edmeston.
	William E. Guest-----	Ogdensburg.
	Henry L. Dinmore-----	Syracuse.
	Thomas B. Arden-----	Phillipstown.
	Cornelius Chase-----	Chatham.
NEW JERSEY-----	Prof. A. D. Frost-----	Burlington.
	R. L. Cooke-----	Bloomfield.
	W. A. Whitehead-----	Newark.
PENNSYLVANIA-----	Lorin Blodget-----	Sugar Grove.
	Prof. J. H. Coffin-----	Easton.
	Edward Fenderich-----	Pittsburg.
	Prof. M. Jacobs-----	Gettysburg.
	Joseph Edwards }-----	Lima. .
	J. L. Miller }-----	
	Rev. J. G. Ralston-----	Norristown.
	John Wise-----	Lancaster.
	John Jackson-----	Darby.
	Andrew Roulston-----	Freeport.
	David Peelor-----	Indiana.
	Corydon Marks-----	Manchester.
	Dr. R. P. Stevens-----	Ceres.
	Dr. Paul Swift-----	Philadelphia.
	Ebenezer Hance-----	Morrisville.
	E. T. Kluger-----	Nazareth.
	Prof. L. D. Williams-----	Meadville.
	Dr. J. Heiseley-----	Harrisburg.
	Orrin T. Hobbs-----	Randolph.
	E. L. Dodder-----	Easton.

List—Continued.

State.	Name.	Residence.
MARYLAND-----	Prof. W. F. Hopkins----- Dr. Lewis F. Steiner----- Dr. William Baer ----- Josiah Jones-----	Annapolis. Frederick. Sykesville. Walkersville.
VIRGINIA -----	Dr. F. J. Mettaner----- Wm. Skeen ----- Lieut. R. F. Astrop----- Charles Meriwether----- Dr. Wm. N. Patton----- David Turner----- William C. Hagan----- Dr. A. M. Grinnan----- Prof. G. R. Rosseter-----	Prince Edward C. H. Huntersville. Diamond Grove. Charlottesville. Lewisburg. Richmond. Christiansburg. Madison. Buffalo.
NORTH CAROLINA---	D. Morrell----- Prof. Jas. Phillips-----	Lake Scuppernong. Chapel Hill.
SOUTH CAROLINA---	Dr. John P. Barratt----- Prof. Lewis R. Gibbes----- Dr. J. A. Young----- H. W. Ravenel ----- T. Carpenter----- Col. W. Wallace-----	Barrattsville. Charleston. Camden. St. Johns, Berkeley. Camden. Columbia.
GEORGIA-----	Richard T. Gibson----- Dr. George F. Cooper-----	Whitemarsh Island. Perry.
FLORIDA -----	John Newton----- John Pearson----- Judge Augustus Steele---	Chesnut Hill. Pensacola. Cedar Keys.
ALABAMA-----	S. J. Cumming----- Benj. F. Holby----- Dr. Charles F. Percival--- A. Winchell----- Dr. T. C. Osborne-----	Monroeville. Weokaville. Benton. Eutaw. Erie.
MISSISSIPPI-----	Geo. L. C. Davis----- Thomas Oakley-----	Natches. Jackson.
LOUISIANA -----	Dr. E. H. Barton-----	New Orleans.
TEXAS-----	Col. H. Yoakum----- Prof. T. C. Ervendberg---	Huntsville. New Wied.

List—Continued.

State.	Name;	Residence.
TEXAS (<i>continued</i>)---	James Henderson----- Dr. Samuel K. Jennings---	San Antonio. Austin.
TENNESSEE-----	Dr. W. W. McNelly----- Prof. A. P. Stewart----- W. M. Stewart----- R. Harris----- O. W. Morris-----	Fayetteville. Lebanon. Clarksville. Memphis. Knoxville.
KENTUCKY-----	John E. Younglove----- A. Beatty----- Laurence Young----- Prof. S. Y. McMasters----	Bowling Green. Prospect Hill. Springdale. Drennon Spring.
OHIO-----	Prof. G. N. Allen----- Prof. W. W. Mather----- Dr. E. C. Bidwell----- George L. Crookham----- S. N. Sanford----- Gustavus A. Hyde----- J. D. McMathews----- Theo. G. Wormley----- F. A. Benton----- Stephen S. Dorsey-----	Oberlin. Athens. Keene. Jackson. Granville. Cleaveland. Hillsboro. Columbus. Mansfield. Republic.
MICHIGAN-----	Rev. Geo. Duffield----- Dr. W. M. Campbell----- Thomas Whelpley----- Dr. J. Hollister----- Dr. H. R. Schetterly----- Charles Betts----- Elmore Wainwright-----	Detroit. Battle Creek. Brest. Grand Rapids. Howell. Burr Oak. Clinton.
INDIANA-----	W. W. Austin----- Dr. John T. Plummer----- Prof. J. Tingley----- Dr. D. D. Owen----- Prof. Gardner Jones----- Daniel H. Roberts-----	Richmond. Richmond. Greencastle. New Harmony. South Bend. Newport.
ILLINOIS-----	Prof. P. P. Brown----- Dr. S. B. Mead----- Henry Talcott----- Prof. Joel Hall-----	Upper Alton. Augusta. Chicago. Athens.
MISSOURI-----	Rev. N. Scarritt-----	Westport.

List—Continued.

State.	Name.	Residence.
IOWA-----	T. S. Parvin-----	Muscatine.
	Dr. Asa Horr-----	Dubuque.
	I. E. Ball-----	Keokuk.
WISCONSIN-----	I. A. Lapham-----	Milwaukie.
	Rev. John Gridley-----	Kenosha.
	Orrin Dinsmore-----	Emerald Grove.
	Edward Spencer-----	Summit.
	Prof. S. P. Lathrop-----	Beloit.
	Dr. F. B. Mills-----	Baraboo.
	James C. Brayton-----	Aztalan.
	Thomas Gay-----	Belle Fontaine.
	C. F. Pomeroy-----	Green Lake.
	J. L. Pickard-----	Platteville.
MINNESOTA TER.----	Rev. Jos. W. Holt, per J. B. Culver-----	Sandy Lake.
	Robert Hopkins-----	Travers des Sioux.
OREGON - -----	George A. Atkinson-----	Oregon City.
BRITISH POSSESSIONS-	Capt. J. H. Lefroy -----	Toronto, Canada W.
	Henry Poole-----	Pictou, Nova Scotia.

Distribution of Instruments.

According to the terms of the circular letter of November, 1849, the use of instruments for observation were promised to those persons who should prove most capable and who occupied the most important places. This has been complied with to the greatest limit permitted by the means of the Institution applicable to meteorology. It was early seen, however, that the applications were so numerous, the country so extensive, and the number of sets which could be furnished so few, that it was determined to modify the plan. All applicants for instruments were accordingly notified that they could be obtained by themselves defraying half the cost; the other half being charged to the Institution. Many have availed themselves of this provision—being more willing to accept these terms in consequence of the superior construction of the articles, all of them comparable with each other and the best standards at home and abroad.

The Institution has adopted the policy of favoring the more distant places in the distribution of instruments, when furnished at its own expense—including distant settlements in the new States, or on the extreme frontiers, such as would not likely be otherwise provided for, and from whom observations would not otherwise be obtained. It also avoids furnishing them to colleges, or other institutions of learning, it being presumed that such

articles are or should be a part of their establishment. Nor could they be supplied to the older and more thickly settled States, where a number of good instruments already exist.

The following tables exhibit the instruments distributed and the places supplied, also the terms upon which they were furnished to the observer :

EXPLANATIONS OF ABBREVIATIONS.—Ps. Psychrometer; Br. Barometer; Tr. Thermometer; Wv. Wind Vane; Rg. Rain Gauge.

Instruments deposited with observers and in part paid for by them.

Names.	Places.	Instruments.
L. F. Munger.....	Albion, N. Y.....	Br. Tr.
G. L. C. Davis.....	Natchez, Miss.....	Br.
W. W. Wilson.....	Pittsburg, Penna.....	Br.
N. Scholfield.....	San Francisco, Cal.....	Br. (Reported broken.)
James M. Tower.....	Waterville, N. Y.....	Br.
J. Stickney.....	Evansville, Ind.....	Br.
S. N. Sanford.....	Granville, O.....	Br.
E. H. Barton.....	New Orleans, La.....	Br. Rg.
John Newton.....	Chesnut Hill, Fla.....	Br.
David Peelor.....	Indiana, Penna.....	Br. Tr.
J. B. Trevor.....	Lockport, N. Y.....	Br. Tr.
E. A. Dayton.....	Madrid, N. Y.....	Tr. Rg. Ps.
G. F. Cooper.....	Perry, Geo.....	Br. Tr. Rg.
J. G. Ralston.....	Norristown, Penna.....	Br. Tr.
A. P. Stewart.....	Lebanon, Tenn.....	Br. Tr.
Asa Horr.....	Dubuque, Iowa.....	Br. Tr. Ps. Rg. Max. T.
S. P. Lathrop.....	Beloit, Wis.....	Br. Tr. Ps. Tr. 2 Reg.
Dr. E. C. Bidwell.....	Keene, Coshocton county, O.....	Br.
B. F. Mills.....	Baraboo, Wis.....	Tr.
P. P. Brown.....	Upper Alton, Ill.....	Br.
D. Turner.....	Richmond, Va.....	Br.
W. Wallace.....	Columbia, S. C.....	Br. Tr. Ps.

Total—20 Brs., 22 Trs., 5 Rgs.

*Not more than four or five of
instruments got to the hands of the
observers as they were all
broken or lost.*

*The average price of the 20 sets
of instruments was about \$30*

Manufactured by the

Instruments deposited with observers entirely at the cost of the Institution.

Names.	Places.	Instruments.
To each of the Telegraph offices at	N. Y., Albany, Utica & Buffalo.	Br. Tr. Rg. and Wv.
Rev. N. Scarritt.....	Westport, Mo.	Tr.
E. G. Squier.....	Leon, Nicaragua.....	Br. 2, Tr. 2.
J. Carrington	Salt Lake, Utah	Br. Tr. Rg. Wv.
J. R. Hammond	Booneville, Mo.	Tr. (Returned broken.)
Rev. Jos. Holt, missionary.	Travers des Sioux.....	Tr.
J. W. Hopkins.....	Stations in Sandy Lake.....	Tr.
Dr. J. Vaughan	Minnesota, Fort Des Moines, Iowa, and Iowa.....	Tr.
G. P. Marsh.	Constantinople.....	Tr.
L. J. Blodget.....	Sugar Grove, Penna.....	Tr.
W. B. Knox.	Ontonagon, Lake Superior.	Br. Tr.
L. W. Conkey.	Syracuse, N. Y.	Ps.
J. Bell	Detroit, Michigan.	Ps.
Doakville Academy ..	Choctaw Nation	Br. Tr.
Dr. Edw. Hitchcock	Amherst, Mass.	Br.
Rev. John Gridley.....	Kenosha, Wis.	Br. Tr.
T. S. Parvin.	Muscatine, Iowa	Br.
I. A. Lapham	Milwaukie, Wis.	Br. 2, Tr. 2.
Rev. Mr. Beckwith.	Sandwich Islands.	Br. Tr. Ps. Tr. 2.
Dr. J. Posey.....	Savannah, Geo.	Br. Tr. Ps. Rg. 2 Reg. Tr.
O. W. Morris	Knoxville, Tenn.	Br. Tr. Ps.

Total—15 Brs., 31 Trs., 6 Rgs.

Smithsonian Observers who have paid the entire cost of their instruments.

Names.	Places.
W. M. Stewart	Clarksville, Tenn.
Dr. J. Ray	Cincinnati, O.
Dr. Lewis J. Steiner.	Frederick, Md.
Professor W. F. Hopkins.	Annapolis, Md.
Dr. J. P. Barratt.....	New Market, S. C.

And five others not reporting their observations to this institution.

Reduction of Observations.

The results of this undertaking consist of a series of thirty-five volumes of monthly returns. As the blank forms for each month are received, they are filed away in one volume in the order of the States of the Union enumerated above. Manuscript and newspaper notices of storms, or other atmospheric phenomena, are also inserted in their respective places, according to their geographical arrangement.

During the last summer this collection of meteorological data was made use of by Professor Espy for the preparation of a forthcoming report.

Abstracts of all the notices of the aurora borealis have been made and incorporated into a volume containing other observations of this meteor, for which blank forms and directions were issued and returns received, the whole of which has been placed in the hands of Captain J. H. Lefroy, R. A., for reduction.

All the notices of periodical phenomena of animals and plants have been extracted, and in connection with other observations, for which blank forms and directions were issued and returns received, have been tabulated with a view to generalization hereafter.

The principal storms of last and the preceding year are now undergoing reduction, including the preparation of a series of charts, showing the lines of temperature, the winds, fall of rain, snow, &c., &c., all of which will serve to illustrate the formation and progress of American storms. ‡

Method of conducting the Correspondence.

When the observations for one month are completed, the observer forwards the register by mail addressed to the Navy Department, having the word "Meteorology" endorsed on the envelope; an arrangement having been entered into with a previous Secretary of the Navy to admit the passage of these documents through his office, and thus relieve the Institution of a heavy charge for postage. For each sheet filled, others in blank are at once sent off, sufficient to enable the observer to keep a copy, which is almost universally done. If a letter accompanies the return sheet, it is immediately answered, and the request contained in it attended to. The tenor of these communications is very various, involving the solution of questions not only in meteorology, but in general physics, chemistry, mineralogy, natural history, botany, applications for public documents, and a number of minor subjects. This part of our plan is always cheerfully performed, inasmuch as it may be regarded as a part of the remuneration which the observer has a right to expect in return for the time and labor expended by him on the observations. It is believed also that the prompt attention given to this part of the plan has tended greatly to keep the corps of observers together. The only remuneration bestowed, consists of various publications of the Institution, which are from time to time sent free of postage. Among those which have been distributed during the year may be enumerated, the Annual Report of the Smithsonian Institution, Dr. Gould's History of the Discovery of Neptune, Professor Jewett's Notices of Public Libraries in the United States, Booth and Morfit's Improvement in Chemical Arts, the Occultation lists and the Ephemeris of Neptune, Ellett's Memoir on the Physical Geography of the Mississippi Valley, a map of the great annular eclipse of July 28, 1851, an engraving of the Smithsonian building, directions for making meteorological observations, accompanied with tables for calculating barometric pressure, dew-point, &c., a map of the stars in the northern heavens for delineating auroral phenomena, and other occasional documents of minor importance.

The observers are generally persons engaged in occupations which admit to some extent of their being present at the place of observation at the required hours of the day all the year round. The services of an intelli-

gent substitute is sometimes made available. The classes to which the observers belong, are professors in colleges, principals or teachers of academies, farmers, physicians, members of the legal and clerical profession, and a few engaged in mechanical and mercantile pursuits.

Respectfully submitted,

E. FOREMAN.

General Assistant.

REPORT
OF THE
EXECUTIVE COMMITTEE,
AND OF THE
BUILDING COMMITTEE.

REPORT OF THE EXECUTIVE COMMITTEE.

By the act of Congress incorporating the Institution, and a resolution of the Board of Regents, it becomes the duty of the Executive Committee to examine and certify the accounts, and to advise with the secretary with reference to the operations which may be undertaken in accordance with the plan of organization. The committee, during the past year, have attended to these duties and beg leave to submit the following report relative to the same :

The operations of the Institution now follow a regular course, and therefore as frequent meetings of the committee are not required as at the beginning. Indeed, they prefer to leave the principal direction of the affairs of the Institution to the secretary, believing that individual responsibility is the safe ground for confidence in the proper administration of a trust of this kind.

The active operations being of a public character, there is full opportunity of judging of their value, and whether they are in accordance with the will of the testator. It is, however, of the first importance that the financial condition of the Institution should be frequently and critically examined, and that it should be seen that every account paid has a proper voucher, and that all money has been properly expended in accordance with the appropriations of the board.

A new system of accounts was introduced in July, 1850, in accordance with which, all bills presented for payment are audited and certified by the secretary, on whose order they are paid by the treasurer, and all the accounts are revised by the Executive Committee. The Executive Committee have examined every account paid since the date mentioned, and find that each is attended with the proper voucher, and that the expenditures have been judiciously and economically made.

They are happy to inform the Board that the financial affairs of the Institution are still in a very favorable condition, as will be seen by the following statement :

The whole amount of the Smithsonian bequest received into the Treasury of the United States, was-----	\$515,169 00
The annual interest on the same at 6 per cent, is \$30,910 04 ;	
the interest which had accrued up to July, 1846, when the trust was placed under the care of the Regents, was-----	242,129 00
Total-----	<u>757,298 00</u>

Out of this sum the Regents were authorized to expend on the building \$242,129, which had accrued in interest, together with such portions of interest on the original bequest as might remain unexpended in any year.

The Regents, however, thought it advisable to increase the principal, and in order to do this, resolved that the erection of the building should be spread over a number of years, and that the sum authorized to be used for this purpose should be put at interest, so that the income from this source might in part defray the expense of the edifice. To carry out this plan, \$250,000 of accrued interest were drawn from the treasury and invested in

United States securities. This plan of finance has been rigidly adhered to, and it now appears from the account books of the Institution that after all the expenditures on the building and grounds, on researches, publications and lectures, on the library, museum and gallery of art, there is on hand government security valued, at the present rate of premium, at \$209,700, so that the original amount and interest which had accrued previous to the time at which the Institution came into the charge of the Regents, has only been diminished by about \$33,000.

In accordance with a part of this plan, Congress has been requested to take from the Institution \$150,000, to be placed with the original bequest as a part of the principal, the interest of which alone can be expended, and it is hoped that an act to this effect will be passed during the present session.

The committee have also examined the various and multiplied operations of the institution as set forth in the report of the secretary, and they are happy to assure the board and the public that, in their opinion, the benevolent designs of the donor are faithfully and efficiently executed in accordance with his injunction, to "*increase and diffuse knowledge among men.*"

The following is an abstract of the expenditures during the past year, ranged according to the programme of accounts, which was submitted by the executive committee at the last meeting of the board :

Expenditures of the Smithsonian Institution during the year 1851.

Pay on contracts.	\$22,000 00	
Pay of architects, &c.	2,214 45	
Expenses of building committee, &c.	43 53	
Miscellaneous to building.	62 07	
Furniture, &c., in common.	657 06	
Do. for publications.	21 00	
Do. lectures.	149 99	
Do. library.	255 22	
Do. museum.	52 68	
Grounds.	515 54	25,971 54
Expenses of Board of Regents.	291 20	
Lighting and heating.	486 35	
Postage.	370 78	
Transportation.	851 43	
Stationery.	419 96	
General printing.	1,159 06	
Apparatus.	148 69	
Incidentals general.	1,878 43	
Salaries general.	3,799 92	9,405 82
Smithsonian contributions.	3,211 76	
Reports on progress of knowledge.	473 82	
Other publications.	100 00	
Meteorology.	394 50	
Computations.	300 00	
Investigations.	110 00	
Pay of lecturers.	635 00	
Illustrations &c., for lectures.	316 49	
Attendance, &c., for lectures.	36 75	
Salaries, publications.	900 00	6,478 32
Cost of books.	2,016 90	
General catalogue.	174 88	
Incidentals to library.	1,402 01	
Salaries to library.	1,999 92	
Explorations—museum.	50 00	
Expenses of collections—museum.	183 03	
Incidentals. do.	512 06	
Salaries. do.	1,500 00	
Gallery of art, purchases.	10 00	
Incidentals, gallery of art.	6 00	7,854 80
Total.		49,710 48
On the building in whole up to end of last year.		174,982 00
		25,971 00
		200,953 00

Respectfully submitted by

A. D. BACHE,
J. A. PEARCE,
JOS. G. TOTTEN.
Executive Committee.

REPORT OF THE BUILDING COMMITTEE.

The Building Committee of the Smithsonian Institution beg leave to submit the following report of the progress of the building during the year 1851, and of the expenditures which have been made under their direction during the same time.

By the resolution of the board, at their session in 1847, the whole expenditure of the building, grounds and furniture, was limited to \$250,000; and for the purpose of meeting this expense, without encroaching too much on the accruing and accrued interest, the building was not to be finished under five years from the time of its commencement.

On account of the giving way of a part of the interior, the Regents, at their meeting in 1849, ordered a survey of the whole work by a commission of architects. This commission reported that the exterior of the building was well constructed of good materials; that the interior, consisting of wood and plaster, was not proper for a depository of valuable property, much of which will be donations, presented with the implied condition that it would be properly secured against danger from fire.

In accordance with this report, the Regents found it necessary to deviate from their original intention, and to order the removal of the wood work which had been erected in the interior of the main building, and to direct that its place should be supplied by fire-proof materials.

This change in the materials of construction, according to the estimate of the architect, James Renwick, Jr., will require an additional outlay of about \$44,000. In round numbers we may therefore estimate the entire cost of the building and furniture at \$300,000. To meet the additional expense, the Regents have directed an extension of the time of completing the building.

The contract of Mr. Cameron includes the finishing the whole of the exterior of the edifice, of the interior of the two wings, of the two connecting ranges, and of all the towers. This contract must be finished before the 19th of March of the present year; or, in other words, within the period of five years from the date of the contract.

During the past year, all the exterior of the building, including all the towers, has been completed, and the public have now an opportunity of judging of the architectural effect, relative to which much discrepancy of opinion has existed. The majority of strangers who visit the city, consider it a very beautiful edifice of which the effect will be heightened by the improvement of the grounds and the planting of the trees.

The committee, since the last meeting of the board, have thought it advisable to order some changes and additions for the better security and use of the building. They have directed that the spiral stairs, leading from the bottom to the top of the octagonal tower, shall be constructed in iron, and that the groined arch, which forms the ceiling of the space between the front towers over the main entrance, shall be constructed in brick instead of wood and plaster; also, that the floor of the second story of the vestibule of the southern tower shall be laid with tile instead of wood. Besides these changes, intended to render the building more secure from fire, the committee have authorized the fitting up of three rooms in the basement of the west connecting range, for printing and stereotyping uses.

In view of appropriating a portion of the main building to the purposes of a large lecture room, the committee have directed that the large doors of the main entrance shall be made to open outward, in order to avoid the fatal consequences sometimes occasioned by the rushing out in a panic of a large crowd of individuals.

To facilitate the approach to the Institution from Pennsylvania avenue, the corporation of the city have appropriated \$2,500 to the construction of an iron foot bridge across the canal at Tenth street, and the necessary footways. This bridge but for an accident would have been finished before this time and will probably be completed in the course of a few weeks. To connect this bridge with the centre of the Smithsonian building, Mr. Downing has constructed a gravel walk underlaid with coarse stone to serve as a drain. Across the bridge and along this path a series of iron pipes have been laid for conveying gas to the Smithsonian Institution from the main pipe along Pennsylvania avenue.

The plan of the improvement of the public grounds mentioned in the last report of the committee has been adopted by the President, and is now in the process of rapid execution under the direction of Mr. Downing. When it is completed, the whole of the area known as the mall, extending from the foot of Capitol hill to the Potomac river, will be converted into a beautiful park adorned with evergreen and other ornamental trees and traversed with carriage drives and gravel walks. In the midst of this varied landscape the Smithsonian building will occupy a prominent position, and with its picturesque architecture will produce a harmonious effect.

The President of the United States in 1847 appropriated to the use of the Institution nineteen acres of land, in the middle of which the building has been erected. This space was enclosed with a fence and planted with trees at the expense of the Smithsonian fund. The whole amount of expenditure for these objects was about four thousand dollars, but the execution of the plan before mentioned, at the expense of the general government, will render unnecessary any farther disbursements on this account.

Without surrendering the right of use of the ground appropriated to the Institution, the partition fence between it and the other part of the mall has been removed and the whole given in charge to Mr. Downing, and his able assistant Mr. Breckenridge.

The committee recommend that the interior of the north and south towers, which connect with the rooms hereafter to be used for the library and museum, shall be made as far as possible fire-proof. It is also suggested that the gas and water-pipes be laid in the building as it progresses.

The attention of the Board is invited to the consideration of such measures as may be deemed preparatory to proceeding with the completion of the centre building, such as plans and estimates

The following is submitted as an account of the expenditures of the Smithsonian Institution relative to the building during the year 1851.

Pay on contracts.....	\$22,000 00
Pay of architect, &c.....	2,214 45
Expenses of building committee, &c.....	43 53
Miscellaneous to building.....	62 07
Furniture, &c....do.....	1,135 95
Grounds.	515 54
	<hr/>
	25,971 54

Respectfully submitted :

WALTER LENOX,
GRAHAM N. FITCH,

PROCEEDINGS
OF THE
SIXTH ANNUAL MEETING
OF
THE BOARD OF REGENTS
OF THE
SMITHSONIAN INSTITUTION.

SIXTH ANNUAL MEETING OF THE BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION.

WASHINGTON, *January 7, 1852.*

In accordance with the resolution of the Board of Regents of the Smithsonian Institution, fixing the time of the beginning of their annual meeting on the first Wednesday of January of each year, the Board met this day in the Smithsonian building, at 12 o'clock noon.

A quorum not being present, the Board adjourned to Saturday the 10th inst.

WASHINGTON, *Saturday, January 10, 1852.*

Agreeably to adjournment the Board of Regents met this day at noon. Present—Messrs. Bache, Fitch, Lenox, Mason, Pearce and Rush, of the Board; and Mr. Seaton, treasurer.

The secretary informed the Board of the re-appointment of Mr. Fitch of Indiana, and Mr. Colcock of Georgia, and the appointment of Mr. Meacham of Vermont, as Regents on the part of the House of Representatives of the present Congress.

The secretary also stated that the accounts and reports of the Institution would be ready for presentation at the next meeting; whereupon, the Regents, after examining the several parts of the establishment, adjourned to meet on Saturday next at 10 o'clock.

WASHINGTON, *January 17, 1852.*

The Board met this day agreeably to adjournment. Present—Mr. Taney, chancellor; Messrs. Bache, Fitch, Lenox, Pearce, Rush and Totten, of the Board; and Mr. Seaton, treasurer.

The report of the Executive Committee was presented by the chairman, (Mr. Bache,) was read, and ordered to lie on the table.

The report of the Building Committee was presented by Mr. Lenox, chairman, and was read.

On motion, the above reports were adopted.

The annual report of the secretary, giving an account of the condition of the Institution and of the operations of the past year, was presented, and a part of the same read.

Copies of the Memoirs and Reports published by the Institution during the past year were placed on the table for the inspection of the Board.

A letter from Gilbert Cameron, contractor for the building, asking for an advance of money from the fund withheld as security for the proper performance of his contract, and a letter from James Renwick, jr., architect, approving of the part payment of the same, were read, whereupon—

On motion of Mr. Pearce, it was

Resolved, That the chancellor fill the places in the Building Committee which were occupied by Messrs. Davis and Hilliard.

The chancellor appointed Messrs. Rush and Fitch, who signified their acceptance.

On motion of Mr. Totten, it was

Resolved, That the secretary be added as a member of the Building Committee.

The letters of Messrs. Cameron and Renwick were then referred to the Building Committee to be reported on at the next meeting.

On motion, the Board adjourned to Saturday, 24th instant, at 11 o'clock, a. m.

WASHINGTON, January 24, 1852.

The Board met at 11 o'clock, a. m. Present—Mr. Taney, chancellor; Messrs. Bache, Colcock, Fitch, Lenox, Meacham, Pearce, Rush and Totten, of the Board; and Mr. Seaton, treasurer.

The Building Committee, to whom were referred the letter of Gilbert Cameron, making application for an advance of \$10,000 from the amount of per centage retained as security for the completion of his contract, and also the letter of James Renwick, jr., architect, reported that they had examined the subject, and requested to submit the following resolution, which, on motion, was adopted :

Resolved, That in accordance with the recommendation of the architect, the Executive Committee be authorized to advance to the contractor the sum of \$6,000 from the amount retained as security for the completion of his contract.

The secretary brought before the Board the subject of the disposition of the accrued interest. He stated, that since the last meeting of the Regents he had conferred with Mr. Corcoran on the subject, and had received from him the following proposition, viz: Messrs. Corcoran & Riggs will give sixteen per cent. premium on the stock belonging to the Institution, will allow five per cent. interest on the whole sum, including the premium, until an investment can be made, and make a deposit of government stocks as security for the safe keeping of the money. Whereupon—

Mr. Pearce offered the following resolution, which was adopted :

Resolved, That the chancellor and secretary be requested to sell \$180,000 of stock of accrued interest upon the terms stated in the resolution of June 1st, 1850, and to deposite the proceeds of such sale with Corcoran & Riggs for the purposes, and on the security therein mentioned.

Mr. Fitch offered the following resolution, which was adopted :

Resolved, That Mr. Pearce be requested to have the memorial relative to the reception of the accrued interest by Congress taken from the files of the Senate and referred to the Committee of Finance.

The reading of the secretary's annual report was then continued, including the report from Professor Jewett, in charge of the Library, giving the details of the operations in this department during the past year. Specimens of titles for catalogues, separately stereotyped and printed, were laid before the Board.

Mr. Rush offered the following resolution, which was adopted :

Resolved, That a copy of the special report of the secretary be furnished for publication to the National Intelligencer immediately after it shall be sent to Congress.

The Board then adjourned to meet on Saturday, 31st instant, at 10 o'clock.

WASHINGTON, *January 31, 1852.*

The Board this day met at 11 o'clock, a. m. Present—Mr. Taney, chancellor; Messrs. Colcock, Mason, Meacham and Totten.

The secretary communicated to the Board a copy of the will of Thomas Wynn, late of Brooklyn, New York, deceased, which contains a contingent devise or legacy to the Smithsonian Institution.

Extract from the will of Thomas Wynn, of Brooklyn, New York:

"Upon the decease of my said daughter the said real and personal estate, or the proceeds and accumulations thereof, shall be equally divided between or among her issue, share and share alike, the issue of children to stand in place of their parent; or if she should die without issue, ten thousand dollars shall be paid to my friend John Anderson, of Florida, and the residue to the Smithsonian Institution at Washington, as I know no benevolent institution more useful or appropriate. A sufficient and ample fund shall, however, be always reserved to secure the annuity to my wife."

On motion of Mr. Colcock, it was

Resolved, That the said will be referred to Mr. Mason, with a request that he would correspond with an agent in New York, to ascertain the value of the estate so devised, and whether any and what measures may be necessary to preserve and secure the interests of the Institution under the said will.

The secretary informed the Board that since the last meeting he had taken the certificates of the stock belonging to the Institution, amounting to \$180,000, from the safety vault of the Secretary of the Senate, and had given them in charge to Messrs. Corcoran & Riggs on the terms prescribed by the Board at their last meeting. He also stated that the certificates were not yet finally transferred to the bankers, but stand in the name of the chancellor and secretary as security for the stock itself. On the proceeds of this stock, which at sixteen per cent. premium amounts to \$208,000, the Institution is to receive interest at the rate of five per cent. per annum.

The secretary was requested to obtain from Messrs. Corcoran & Riggs a written account of his agreement with reference to the aforementioned transaction.

The Board then adjourned to Saturday the 14th of February next.

WASHINGTON, *Saturday, February 14, 1852.*

The Board met this day at 11 o'clock, a. m. Present—Mr. Taney, chancellor; Messrs. Colcock, Fitch, Lenox, Mason, Meacham and Totten, of the Regents; and Mr. Seaton, treasurer.

The secretary presented a written statement from Messrs. Corcoran & Riggs relative to the sale of stock belonging to the Institution, and the deposit of the certificates of United States stock as security therefor.

A proposition was submitted from Dr. H. Stone, of New York, to furnish designs for a monument in commemoration of James Smithson. An explanation of the designs exhibited was read.

On motion of Mr. Mason, it was

Resolved, That Dr. Stone's proposition lie on the table.

The secretary communicated a proposition from Henry Stevens, of London, to obtain facts relative to the life of James Smithson,

The following preamble and resolution, submitted by Mr. Mason, was adopted :

It being represented to the Board that Mr. Henry Stevens, now of London, has proposed to collect certain authentic materials in Europe, which may be useful for a future memoir of the life and character of James Smithson, the founder of the Institution, and without compensation for such services ;

Resolved, That the secretary be authorized to accept the offer of Mr. Stevens, and to appropriate a sum not exceeding fifty dollars for this object.

The secretary laid before the Board a communication from Joseph Bradley relative to claims of John Sniffin, sub-contractor, against Gilbert Cameron, contractor for the Smithsonian building.

On motion of Mr. Fitch, the letter was referred to the Building Committee.

The conclusion of the secretary's annual report was read, containing a report by Professor Baird of the details of the statistics of the museum, of the printing of the publications, and of the exchanges; also an account of the operations relative to Meteorology, the statistics of which are given in a report by Professor Foreman.

On motion of Mr. Fitch, it was

Ordered, That a vote of thanks be presented to Sir Henry Bulwer, for his co-operation in facilitating the transmission of the Smithsonian publications into Great Britain, duty free. The same to be signed by the chancellor and secretary.

The Board then adjourned to Saturday, 21st instant.

WASHINGTON, *Saturday, February 21, 1852.*

The Board of Regents met this day, at 11 o'clock a. m. Present—Mr. Taney, chancellor; Messrs. Fitch, Lenox, Mason and Totten, of the Board; and Mr. Seaton, treasurer.

Mr. Mason, to whom was referred the will of the late Thomas Wynn, of Brooklyn, reported that he had written to Mr. J. H. Patten, of New York, relative to the matter, and had received a communication, which he presented to the Board. It furnished a statement of facts relative to the will, with suggestions as to the course to be pursued by the Board with reference to the bequest.

The subject was again referred to Mr. Mason for further investigation.

Mr. Lenox presented a report from the Building Committee on the letter of J. H. Bradley, Esq., relative to the unsettled claims of John Sniffin against Gilbert Cameron, contractor, with the accompanying resolution, which was adopted :

Resolved, That the secretary be authorized to inform Joseph Bradley, Esq., that although the Board of Regents cannot grant the application made in his letter of 10th February last, in behalf of John Sniffin, as in their opinion it would be an interference with the rights of the contractor, G. Cameron, yet that the Board will readily unite in any arrangement between the parties which will facilitate the settlement of the controversy between the said Sniffin and Cameron, not inconsistent with its own rights and duties in the business.

The secretary stated to the Board that the contract of Mr. Cameron would expire on the 19th of March, and suggested that the Board ought to determine whether the fireproofing of the centre building should be immediately proceeded with; and also whether it be advisable to provide a

larger lecture-room, and make other changes for the better adaptation and security of the building.

All of which was referred to the Building Committee.

The Board then adjourned to Saturday, 28th inst., at 10 o'clock a. m.

WASHINGTON, *Saturday, February 28, 1852.*

The Board of Regents met this day, agreeably to adjournment.

A quorum for the transaction of business not being present, the meeting adjourned to Saturday, the 1st of May next.

WASHINGTON, *Saturday, May 1, 1852.*

The Board met this day, at 10 o'clock a. m. Present—Mr. Taney, chancellor; Messrs. Bache, Fitch, Lenox, Meacham, Pearce, Totten, of the Board; and Mr. Seaton, treasurer.

Mr. Lenox, from the Building Committee, to whom was referred the subject of the completion of the building, reported as follows:

That in the opinion of this committee it is advisable to proceed with the completion of the building as far as the funds will allow, and as rapidly as is consistent with good workmanship; and in accordance with this opinion they offer the following resolution:

Resolved, That the Building Committee be authorized to contract for the finishing of the building, or so much of it as they may think at present necessary; and that they be allowed to make such changes in the interior as they may think best suited to the wants of the Institution: *Provided*, They report the terms of any contract or contracts they may make, and the character of the changes which they may contemplate in the interior of the building, to the Board of Regents, before operations are commenced under their contract.

Mr. Bache, from the Executive Committee, presented the following resolution:

Resolved, That during the year 1852, the sum of thirty thousand dollars out of the Smithsonian income be and is hereby appropriated to be expended under the direction of the secretary, and with the advice of the Executive Committee, to defray the expenses of the Institution, and to carry out the several parts of the programme.

Mr. Meacham presented the following resolution, which was adopted:

Resolved, That the chancellor and secretary be authorized to make the annual report of the Regents to Congress.

Parts of the third and fourth volume of Smithsonian Contributions, so far as printed, were laid on the table for the examination of the Board; also a printed list of foreign correspondents.

On motion of ———, the thanks of the Board were presented to Dr. Charles G. Page for donations of apparatus.

The secretary laid before the Board the memorial of Josiah Holbrook, requesting the publication of tracts by himself on agricultural geology and chemistry for general distribution. Referred to the secretary and Executive Committee. Also, a petition from Miss Gilpin, relative to the establishment of a Normal school for female teachers. Referred to the secretary and Executive Committee.

The secretary stated that since the most important part of the operations of the Institution were transacted by letters, it became highly important that all correspondence, however trifling it might appear, should be care-

fully preserved, and in order to enforce this upon himself and upon all the assistants, he requested a specific resolution of the Board with reference to it; whereupon, on motion of Mr. Totten, it was

Resolved, That all correspondence relative to the business of the Institution be carefully preserved in bound volumes, and that all such correspondence be open at the call of the Regents or of the Executive Committee through the secretary.

The secretary brought before the Board the subject of copyright books. He stated that the system adopted was defective that according to the present arrangement, while all the most worthless publications were sent and the Institution put to the expense of furnishing certificates for those, many of the best works published in the country were not deposited. He further stated that Professor Jewett had proposed a plan for remedying the evil, to which he would ask the attention of the Board.

On motion of Mr. Pearce, it was

Resolved, That the subject of depositing copyright books in the Smithsonian Institution be referred to the committee formerly appointed on that subject.

On motion of Mr. Fitch, Mr. Meacham was appointed, in place of Hon. Jefferson Davis, on the committee relative to copyright books.

The secretary brought before the Board the subject of additional compensation to Dr. J. G. Flügel, of Leipsic. He stated that this gentleman had acted as the agent of the Institution for all the libraries and learned institutions of central and northern Europe, and that about two hundred letters and copies of letters had been received from him.

On motion of Mr. Pearce, it was

Resolved, That one hundred and fifty dollars be added to the sum allowed to Dr. Flügel for the present year.

The secretary placed before the Board a letter from Lieutenant Colonel Edward Sabine, R. A., Corresponding Secretary Royal Society of London, of which the following is a copy:

ROYAL SOCIETY'S APARTMENTS, SOMERSET HOUSE,
LONDON, March 19, 1852.

MY DEAR SIR: I duly communicated to the Earl of Rosse, President of the Royal Society, your letter to me on the subject of the interchange of scientific publications between the United States and this country, and the admission into England, duty free, of scientific books and memoirs presented to institutions or to individuals here, either by or through the Smithsonian Institution. I accompanied this communication by a letter addressed to the president, which you will read in the enclosed printed minutes of the council of the Royal Society of January 15, 1852. The subject has since been brought by the Earl of Rosse under the consideration of her Majesty's government, who have shown, as might be expected, much readiness to meet, in the same spirit, the liberal example which has been set by the United States, in exempting from duty scientific books sent as presents from this country to the Smithsonian Institution, and through that Institution to other institutions, and to individuals, cultivating science in the United States. The mode which has been suggested by our Board of Customs, for admitting duty free scientific publications designed for this country, and which, we hope, will receive the approval of the treasury, is, that a list should be furnished by the Royal Society of the names of all institutions and individuals to whom such works may be expected to be addressed, when the custom-house officers will have directions to pass without duty all such publications having the names of such institutions or persons inscribed either on the cover or on the title page, which are sent to this country in packages directed to the Royal Society—the list to be amended or extended from time to time. The Royal Society will gladly take charge of and distribute under these regulations the books which the Smithsonian Institution may send for institutions and individuals in this country, receiving them from the agent in London appointed by the Smithsonian Institution; and I shall be obliged by your furnishing me, at your earliest convenience, with a list, as complete as you may be able to make it, of the names of the institutions and persons to whom books or memoirs are likely to be sent.

The Royal Society will also gladly receive and forward to their ultimate destination (where such assistance may be useful) packages containing publications of a similar description, designed for institutions and individuals on the continent of Europe; such packages being directed to the Royal Society, and stated on the outside of the case or package to be *from the Smithsonian Institution*. The customs' duties will, in such cases, be either altogether remitted or returned on re-exportation.

If it be a convenience to the cultivators of science in the United States, that publications presented to them by institutions or individuals on the continent of Europe, or elsewhere, should be addressed to the Royal Society as a channel of communication, the same facilities will be given by the Board of Customs, and the Royal Society will, with pleasure, make the required arrangements. It will be necessary, in such cases, that packages arriving from the continent of Europe or elsewhere should be marked on the outside, "*for the Smithsonian Institution*," and the foreign secretary of the Royal Society should be apprised of their being sent. Expenses of freight would of course be defrayed by the agent of the Smithsonian Institution.

I remain, my dear sir, with great respect and regard, very sincerely yours,

EDWARD SABINE,

Vice President and Treasurer of the Royal Society.

The Executive Committee presented the following report and resolutions:

The Executive Committee, to whom was referred the subject of inquiring into the expediency of providing buildings for the officers of the Institution, report:

That after due reflection they have come to the conclusion that it would conduce very much to the interests of the Institution if the officers were provided with houses on the Smithsonian grounds, so that they might be present on all occasions, and be as much as possible at all times identified with the operations of the Institution; yet at present while the main edifice is unfinished, they do not consider it advisable to incur the expense of additional buildings, and would therefore recommend that in lieu of the rent of a house, five hundred dollars be added to the salaries of Professors Jewett and Baird, to be paid from the beginning of the present year.

The committee has learned with regret that by the construction given by the secretary to the resolution of the Board of Regents of December 4, 1846, an allowance less than was intended by that resolution has been received by him for house-rent, and offer a resolution to meet the case.

A. D. BACHE,

J. A. PEARCE,

J. G. TOTTEN.

} *Executive Committee.*

The following resolutions were accordingly, on motion, adopted:

Resolved, That in the opinion of the Board of Regents, the resolution of December 4, 1846, was intended to make an allowance to the secretary of five hundred dollars per annum, in lieu of a residence.

Resolved, That in lieu of the rent of a house there be added to the salaries of Professors Jewett and Baird, each, five hundred dollars per annum, from the beginning of the present year.

The secretary stated that he wished to be on the safe side, and that he had no intention at present of claiming anything on account of previous house-rent.

The Board then adjourned to Saturday, 22d instant.

WASHINGTON, *Saturday, March 22, 1852.*

The Board met this day, at 11 o'clock a. m. Present—Messrs. Bache, Fitch, Lenox, Meacham, Pearce, Totten, of the Board; and Mr. Seaton, treasurer.

In the absence of the chancellor, on motion, Mr. Pearce took the chair.

Mr. Lenox, from the Building Committee, informed the Board that the work on the building by the present contractor was not quite completed, but might be expected to be so in about ten days. He also remarked upon

the condition of a suit pending between Cameron and Sniffin, and its bearing upon the action of the Board.

A bill of extra work by G. Cameron for flagging, &c., was presented and referred to the Building Committee, to be audited and settled.

The secretary stated that Mr. Stanley, the artist, had deposited a gallery of Indian portraits in the west wing of the building, which had attracted many visitors.

The Board then adjourned to Saturday, June 5.

APPENDIX.

U. m. 11

PROFESSOR TURNER'S LETTER ON INDIAN PHILOLOGY.

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NEW YORK, *December 16, 1851.*

DEAR SIR: In reply to my letter stating that I had examined the Dakota Dictionary and Grammar prepared by members of the mission to that tribe, and recommending the publication of the same, you say: "Give me your reasons for thinking it an interesting addition to knowledge and worthy of publication in the Smithsonian Contributions; also any remarks you may think of importance with reference to the compilation and publication of works of this kind."

My reasons for recommending the publication in the terms alluded to, have reference partly to the character and merits of the works under consideration, and partly to the value of such works in general, as furnishing materials for the study of the philology and ethnology of this continent, and thus "promoting the increase of knowledge among men."

The Grammar and Dictionary of the Dakota language, now presented in manuscript for publication by your Institution, are the result of the joint labors of the members of the Dakota mission, assisted by the most intelligent natives, for the last eighteen years, brought together and placed in their present form by the Rev. S. R. Riggs, and are designed to meet the requirements both of the practical linguist and the comparative philologist. An examination of the MSS. show that they are drawn up with ability and conscientious care. The Grammar is simple and brief. The Dictionary consists of two parts, Dakota-English and English-Dakota. The Dakota-English part contains upwards of 15,000 words. Their division into syllables is marked, and also the place of the accent. Besides the definition or English rendering of each word, the part of speech to which it belongs is noted, its etymology explained, and the changes of form exhibited which are produced by the introduction of pronouns and particles. The English-Dakota part is briefer and has more of the character of a simple vocabulary. There are some changes and additions which it would be desirable to make, particularly in the Grammar. I have had the pleasure of seeing and consulting with Mr. Riggs, who has expressed his readiness to introduce any practicable improvements that may be suggested.

The languages of the aborigines of North America are worthy of attention in a scientific point of view on two accounts; and first, for their own sake, as constituting an important branch of philological investigation. These languages display many interesting analogies to those of other parts of the globe, and many equally interesting peculiarities of their own. Most of those we are acquainted with are of a highly complicated and ingenious construction; and the study of them enlarges the views of the comparative philologist by disclosing to him new and curious phases of the human mind as manifested in these new modes of communicating ideas. For to the scientific philologist—who regards each language, not as something elaborated by art or design, but as a true organism, the spontaneous growth, as it were, of the mind of the nation that uses it, and as more or less intimately connected by virtue of its origin with other organisms of the same nature—the study of a language simply, irrespective of the literature it may or may not contain, affords the same species of instruction and delight

which the examination of a new production of the animal, vegetable, or mineral kingdom does to the student of natural history. The phenomena exhibited by the rudest form of speech furnish matter for admiring the wisdom of the Great Fashioner of man and all his faculties.

Secondly, a knowledge of these languages is desirable in view of their bearings on the great ethnological question of the origin, affiliations, and migration of the tribes that inhabited this continent prior to its discovery by Columbus. The Smithsonian Institution early gave evidence that it appreciated the importance of these questions, by announcing among the departments of knowledge to which it proposed to lend its aid, "ethnological researches, particularly with reference to the different races of men in North America." This purpose has already begun to be carried into effect by the publication of the "Ancient Monuments of the Mississippi Valley" and the "Aboriginal Monuments of the State of New York," works which have received the meed of the heartiest approbation of ethnologists, both in this country and in Europe.

If asked in what manner do philological studies bear upon the ethnology of North America, we reply: It is true, none of the numerous peoples of this continent ever arrived at the grand and fruitful idea of an alphabet in which to record their deeds for the instruction of posterity. The traditions which we find among them are of a vague and trivial character, and contain in general no information that can lay claim to anything like antiquity, excepting the bare fact that a given tribe at a period more or less remote migrated from a certain direction north, south, east, or west. Hence it is neither by perusing ancient records nor by conversing with individuals now living, that a knowledge of the language of our aborigines can be made to furnish us with true and reliable information on the topics alluded to; this can be done only by comparing together and analyzing the structure of these languages themselves. There are various means for determining the character and relationship of tribes of men who are without a history, such as their physical conformation, character, habits, and manners, their implements for procuring and preparing food, their clothing, weapons, dwellings, their arts of various kinds, their marriage, funeral, and other rites, &c.; but of all means the structure of their languages is one of the most certain and satisfactory. When the testimony of language can be adduced in corroboration of that obtained from these other sources, the proof is considered to be as perfect as the nature of the case admits; but so long as that is wanting, the argument is felt to be insecure and incomplete.

We are already in possession of many printed vocabularies of Indian languages of greater or less extent and accuracy, and of a very few grammars, mostly meagre and imperfect. These have been studied and compared by scholars with eager assiduity, and the interesting discoveries to which they have led have created a demand for a body of materials more copious and exact than has hitherto existed. In order that the philology and ethnology of this continent may receive thorough elucidation, it is necessary that there should be given to the learned world a complete dictionary of each language containing, as far as is practicable, all the words of the language accurately analyzed and defined, and also a grammar in which all its forms, inflexions, and constructions are fully exhibited. The publication of works of this nature is too expensive an undertaking for individuals, pecuniary profit being altogether out of the question; nor is there any public institution to which the duty of initiating and carrying out a

comprehensive scheme for effecting this great object could be assigned so appropriately as to your own.

The source to which we must mainly look for contributions to our stores of American philology are the members of the various missions to the Indians. These are the only large class of men, qualified by education and sustained by motives of benevolence, whom we can expect to spend long years in studying the mental idiosyncrasies of our rude red brethren, and in mastering the formidable difficulties of their complicated unwritten languages. There is also another class of men whose position would enable them to do much in aid of the cause, if they could be induced to interest themselves in it, I mean the superintendents and agents of Indian affairs. I would respectfully suggest, then, that, in the first place, the Institution address the Board of Missions and the Indian Office, requesting that means be taken to ascertain from the gentlemen under their control what grammars and dictionaries already exist in manuscript, the extent and nature of the same, by whom compiled, what steps if any have been taken towards their publication, &c. When this preliminary information shall have been obtained, it will be time to set about filling up the lacunæ. If the bureaux above mentioned enter heartily into the project, which they may be well expected to do, much can soon be effected in this behalf by pressing the subject upon the attention of those most competent to undertake the work in each particular instance, assuring them that their labors will be duly appreciated and that measures will be taken for laying them in a proper manner before the world. There are many persons, missionaries and others, who have the requisite knowledge and ability to produce works of this kind, but who do not undertake the labor, for the simple reason that they have never had any inducement to do so.

The *means* by which these works are to be published, and the *mode* in which it should be effected, are matters worthy of consideration.

First, as to the means. Although this subject of Indian philology is one of exceeding interest, the funds of the Smithsonian Institution have their limit, and there are many other important departments of knowledge which claim attention at its fostering hands. The publication of anything like a complete series of works for the elucidation of the languages of the whole continent of North America will demand a very great outlay of labor and money—far more indeed than the Smithsonian can be justly expected to furnish alone. Its exertions therefore should be chiefly directed to collecting, suggesting to be written, and superintending the uniform and accurate publication of such works; and it should furnish only such part of the pecuniary means as cannot be obtained from other sources. The quarters to which the Institution, as it would seem, may confidently look for aid, in addition to that furnished by liberal and public spirited individuals, are the Board of Missions and the Office of Indian Affairs, both of which are directly interested in the matter, as the proper discharge of the duties of the individuals under their supervision would be greatly facilitated by a competent knowledge of the Indian languages. The government of the State or Territory in which a tribe is situated may likewise be confidently appealed to for aid. Lastly, assistance, pecuniary or literary, will no doubt be gladly furnished by our ethnological, historical, and antiquarian societies, according to the nature of each case and to their respective abilities.

As to the proper mode of compiling and printing these works, a little practice will be necessary for settling all the details. Of course both the

grammars and dictionaries should be made as perfect as the opportunities and abilities of the authors will allow. These should be reminded that accuracy, perspicuity, and fullness of illustration by means of examples, are the great desiderata; and that as these books are designed for the use of educated persons, it is unnecessary to occupy space with ordinary definitions of the terms, article, noun, &c. Let the writer take it for granted that the reader is already acquainted with the common terms and rules of grammar, and proceed at once to describe the particular language under consideration; let all fanciful comparisons with Hebrew, Greek, &c., be excluded. Each grammar should note the dialectical peculiarities of the language of which it treats, and also the changes that may be taking place in it, that is to say, such as have been observed by the whites since they have been familiar with it, and especially such as are indicated by differences in the speech of old and young persons. To each grammar should be appended one or more specimens of composition in the language, with an interlinear English translation. For the purpose of comparison, the parable of the Prodigal Son is superior on many accounts to the Lord's Prayer, although it would be well to give both. But it is very desirable, that to these should be added some original production of the native mind—some speech, fable, legend, or song, that may afford samples of aboriginal modes of thought as well as of expression. It seems strange, that so apparently obvious and easy a means of obtaining an insight into the workings of the mind of rude nations, which would prove of the highest interest to the philosophical inquirer, should have been hitherto almost entirely overlooked. There should also be prefixed to each work of the kind, an introduction giving the name of the tribe and its subdivisions, the territory it occupies, its numbers, a sketch of its past history as far as known, and present condition, and any peculiarities of its language, for which a proper place cannot elsewhere be found. In the dictionary it is necessary that, besides the definitions of the meaning of words, their etymology, *i. e.* the elements of which they are composed, should be exhibited in all cases where it can be ascertained. The want of this has been a serious defect in all the vocabularies of Indian languages hitherto compiled. In the proposed series of works some uniform and comprehensive system of noting sounds should be adopted, based on the principle of representing each articulation by a single character; and in all cases the accented syllable should be marked. A full set of rules and hints, together with a copy of a grammar and dictionary published on the plan of the Institution, might be sent to each person or body of persons who engage to prepare a similar work to be published under its auspices. Although the Institution cannot be expected to defray the whole expense of publishing these works, it should offer to include in its "Contributions" all such as are properly prepared. The size of the page is well adapted to exhibit the inflexion of verbs, &c., in tabular forms, by studying which a general view of a subject can be gained much more easily than when the several parts are scattered over a number of small pages. The types, too, which are cut to represent certain sounds in one language, can be used for the same sounds in other languages. It would immensely facilitate the comparative study of these languages, if the works describing them were all compiled on the same principle, written according to the same system of notation, and embraced in the same collection.

What has been said relates only to the Indians within the United States, to which, of course, the operations of the Institution should, for a consider-

able time at least, be principally directed. Still something might soon be done towards extending the good work over the rest of the continent. As soon as the first grammar and dictionary have been published, I would suggest that a copy be sent to the university of Toronto, together with a letter explaining the object and plan of the Institution, and asking its co-operation. It could doubtless accomplish much, if so inclined, by the aid of the missionaries scattered through the British possessions and of the gentlemen in the employ of the Hudson's Bay Company, some of whom have paid a good deal of attention to the Indian languages. A similar communication might be opened with the University of Mexico, which would probably prove very advantageous, as in Mexico many valuable MS. grammars and dictionaries, prepared by the Jesuit and Franciscan missionaries, are believed to exist. A descriptive catalogue of these works, and also of rare printed works of the kind, noting their place of deposit, would be of great interest and utility.

I now conclude, sir, these remarks and suggestions, which it would have been presumptuous in me to offer except in obedience to your own request—with the expression of my sincere satisfaction at the broad and enlightened views which have prompted your Institution to engage in this noble undertaking. It is one whose results will interest literary, scientific, and philanthropic men in all parts of the world, and which it is incumbent on Americans to perform. It has long been expected and demanded at our hands, and it is time it were earnestly begun.

With great respect, I am your very obedient servant,

WM. W. TURNER.

JOSEPH HENRY, Esq.,

Secretary of the Smithsonian Institution.

REPORT ON METEOROLOGY.

Report of the Committee on Meteorology of the American Association for the Promotion of Science, on the arrangement of a System of Combined Meteorological Observations for North America. Adopted August, 1851.

The Committee on Meteorology, to whom was referred by the Association the "Proposition for extending the system of meteorological observations now in operation under the direction of the Smithsonian Institution," respectfully present their report, and ask of the Standing Committee their consideration of it, and of the resolutions appended to it, so that they may be presented, if approved, to the Association at the present meeting.

It is not necessary, at the present day, to go into any argument on the importance of such observations. Wherever civilization extends, their value is recognized, and they are sustained by private and public exertions. At different times systems of observations have been organized by different governments and societies of the Old World, for determining the general and particular questions which occur; and in our country, the general government, and several of the State governments, as New York, Pennsylvania, Massachusetts, have kept up, for a limited time, several series of meteorological observations, from which results of high importance have been derived.

Recently the British government have determined to maintain the Magnetical and Meteorological Observatory at Toronto, where full observations are made with instruments registering by photographic methods. Our own government still keeps up the observations at the military posts, under the enlightened supervision of the surgeon-general of the army. The Treasury Department has, not long since, expressed the opinion that the keepers of light-houses should be sufficiently well instructed to make such observations. The Navy Department fosters the meteorological observations under the direction of the Smithsonian Institution. The Hudson's Bay Company have recently consented, on application of the Association, to establish observations at such of their posts as might seem desirable to the Association. The States of New York and of Massachusetts have renewed their action in the matter. There is a great desire to profit by these very favorable circumstances of our country, and of the present day, to organize a system which shall connect all these efforts, otherwise isolated, and to derive from these and from similar ones the means of advancing the knowledge of the meteorology of North America.

We expect to derive from systematic observations, extended over as much of our continent as is accessible to us, at stations selected in reference to the problems to be made out, a thorough knowledge of our climate in all its relations, and of its variations in the same and in different localities. The mean temperature of points is to be determined with carefully verified instruments, similar to each other, similarly placed, and observed under the same rules and conditions; the lines of equal mean temperature will result, and the variations at different seasons will be shown. The limits of vegetation will be found, and the areas of climate adapted to the cereals. The

parallels within which wheat, Indian corn, etc., may be profitably cultivated, and which present results so different from those found to exist in the eastern continent in Asia, will be determined accurately. The degree of dryness and moisture will be ascertained; the amount of rain, and the amount of evaporation; questions not only bearing upon the health and comfort of man, but upon his attempts to facilitate communication by canals and the improvements of rivers, and upon the means of avoiding or controlling floods and freshets. The number of days of rain, the number of clear and cloudy days, and the amount of loss of the sun's effect by cloudiness, will be determined; the direction and force of the wind, and the systems of winds prevailing in different parts of the continent, and in the different seasons of the year. The mean pressure of the air and its variations will be seen, as shown by the barometer; from which important data in regard to relative heights of points may be obtained, giving the general topographical features of our extended country, and serving as a reconnoissance in more distant parts of it for railroads or common roads which may be proposed. The progress of waves of pressure, either connected with storms or with the ordinary fluctuations of the atmosphere, will be ascertained. All periodical phenomena will be studied in connexion with these observations; the flowering of plants and trees, the ripening of grains and of fruits, the migrations of animals. The frequency and intensity of the aurora borealis will be determined; and its singular variations in passing from north to south and east to west, on our continent, will be studied. The direction of the motion, the frequency, the intensity, and other circumstances actuating our thunder storms, will be ascertained. From the observations will result the law of storms in its full development; and its application to all parts of the continent, or limitation to particular portions will be entirely ascertained; an application so important to the farmer and navigator, so interesting to the man of science, and so desirable to be known by every one who travels on any of our lakes or rivers, or along our extensive and somewhat stormy coasts. The lines of our telegraphs will be rendered available for observations on this subject, more complete than any which have been hitherto practicable; and while they enable us to determine the laws of storms, will also furnish means of giving notice of their progress, and then of anticipating their approach.

The diseases incident to different climates, the phenomena of malaria, the progress and laws of epidemics, may be studied in connection with the periodical phenomena from carefully collected statistics.

A contribution to ethnology may be the statistics of the numerical decrease of the Indian races; to the interest of which many minds in this country are fully alive.

These are only a portion of the results which may be expected from a wide-spread and well organized system of meteorological observations.

We would propose, therefore, to establish at once, in addition to those which now exist, fifty meteorological stations in the positions named below; to supply the primary stations with a full set of instruments, carefully compared and of uniform construction, namely, a thermometer, barometer, hygrometer, rain and snow gauge, and wind vane; to cause hourly observations to be made at six or eight stations, and observations three times day at all others, according to the same system.

The following list includes stations already occupied, which are, however, marked to distinguish them from those which it is proposed to establish :

List of the meteorological stations to be established.

Sub-tropical Zone.—Key West, Florida; Point Isabel, Rio del Norte, New Orleans, Louisiana.

Warm Temperate Zone.—*A.* St. Augustine, Florida; Tuscaloosa, Alabama; Vicksburgh, Mississippi; Fredricksburg, Texas; El Paso, New Mexico; San Diego, California. *B.* Chapel Hill, Carolina; Knoxville, East Tennessee; Nashville, West Tennessee; Fort Atkinson, Indian Territory; Fort Washita, Indian Territory; Santa Fé, New Mexico.

Middle Temperate Zone.—*A.* X. Washington, D. C.; Lexington, Virginia; Fort Leavenworth, Indian Territory; Bent's Fort, do. *B.* X. New York city, New York; a central point, Pennsylvania; Steubenville, Ohio; Columbus, Ohio; Indianapolis, Indiana; Springfield, Illinois; Bloomington, Iowa.

Middle Temperate Zone (continued.)—Fort Kearney, M. T.; Fort Laramie, M. T.; Salt Lake, Utah; Fort Hall, Oregon; Nueva Helvetia, California; San Francisco, do.

Cold Temperate Zone.—Bowdoin College, Maine; Dartmouth College, New Hampshire; Burlington, Vermont; Kingston, Canada; Manitoulin Island, or Bruce Mines, Canada; Lansing, Michigan; Milwaukee, Wisconsin; Fort Gaines, Minnesota; Fort St. Pierre, Minnesota Territory; Fort McKenzie, do.; Fort Kootanie, Oregon; Fort Walla Walla, do.; Fort Vancouver, do.; three new light-houses along the coast from Oregon to Point Conception, California.

Resolutions.

Resolved, That the committee on meteorology recommend to the American Association for the Advancement of Science, the appointment of a committee to memorialize Congress in regard to the *immediate* extension of the system of meteorological observations now making in the United States, under the direction of the Smithsonian Institution.

Resolved, That this committee be authorized and directed to request the Secretary of the Treasury to provide for the making of meteorological observations, according to the directions of the Smithsonian Institution, by the keepers of the light-houses which are to be established at points on the western coast of the United States, named in the reports of the committee on meteorology.

Resolved, That the same committee be requested to address the Surgeon General of the United States in reference to the co-operation of this department in the same system, and to suggest the locations named in the report of the committee on meteorology as those where the observation should be made.

Resolved, That the same committee be requested to memorialize the Canadian government, and the several legislatures of the States of our Union, asking their co-operation in the foregoing system of observations.

Resolved, That the same committee be requested to inform the Hudson Bay Company of the steps which have been taken to carry into effect the system referred to in the memorial addressed to them by this association, at the last annual meeting.

SEVENTH ANNUAL REPORT

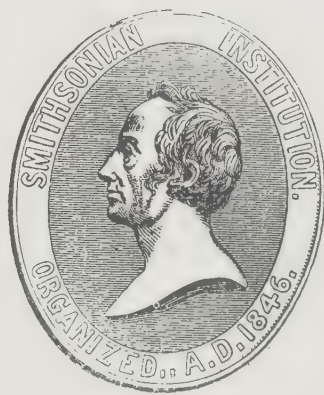
OF THE

BOARD OF REGENTS

OF THE

SMITHSONIAN INSTITUTION,

FOR THE YEAR 1852.



WASHINGTON:
PRINTED BY ROBERT ARMSTRONG.

1853.

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SEVENTH ANNUAL REPORT
OF
THE BOARD OF REGENTS
OF THE
SMITHSONIAN INSTITUTION
TO THE
SENATE AND HOUSE OF REPRESENTATIVES,
SHOWING
THE OPERATIONS, EXPENDITURES, AND CONDITION OF THE
INSTITUTION DURING THE YEAR 1852,
AND THE
PROCEEDINGS OF THE BOARD OF REGENTS UP TO DATE.

WASHINGTON:
ROBERT ARMSTRONG, PRINTER.
1853.

LETTER

FROM THE

SECRETARY OF THE SMITHSONIAN INSTITUTION,

COMMUNICATING

The Annual Report of the Board of Regents.

MARCH 1, 1853.—Ordered to lie on the table and be printed.

SMITHSONIAN INSTITUTION, *August 20, 1852.*

SIR: I have the honor herewith to transmit to you the Annual Report of the Board of Regents of the Smithsonian Institution, and beg leave to request that you will present it to the Senate of the United States.

I have the honor to be, very respectfully, your obedient servant,

JOSEPH HENRY,

Secretary Smithsonian Institution.

Hon. DAVID R. ATCHISON,

President of the Senate of the U. S.

OFFICERS OF THE SMITHSONIAN INSTITUTION.

MILLARD FILLMORE, *Ex-officio* Presiding Officer of the Institution.

ROGER B. TANEY, Chancellor of the Institution.

JOSEPH HENRY, Secretary of the Institution.

CHARLES C. JEWETT, Assistant Secretary, in charge of the Library.

SPENCER F. BAIRD, Assistant Secretary, in charge of the Museum.

EDWARD FOREMAN, General Assistant.

ALEXANDER D. BACHE,	} Executive Committee.
JAMES A. PEARCE,	
JOSEPH G. TOTTEN,	

GRAHAM N. FITCH,	} Building Committee.
RICHARD RUSH,	
JOHN W. MAURY,	
JOSEPH HENRY,	

W. W. SEATON, Treasurer.

REGENTS OF THE INSTITUTION.

———, Vice President of the United States.

ROGER B. TANEY, Chief Justice of the United States.

JOHN W. MAURY, Mayor of the City of Washington.

JAMES A. PEARCE, Member of the Senate of the United States.

JAMES M. MASON, Member of the Senate of the United States.

ROBERT M. CHARLTON, Member of the Senate of the United States.

GRAHAM N. FITCH, Member of the House of Representatives of the United States.

WILLIAM F. COLCOCK, Member of the House of Representatives of the United States.

JAMES MEACHAM, Member of the House of Representatives of the United States

RUFUS CHOATE, Citizen of Massachusetts.

GIDEON HAWLEY, Citizen of New York.

J. MACPHERSON BERRIEN, Citizen of Georgia.

RICHARD RUSH, Citizen of Pennsylvania.

ALEXANDER D. BACHE, Citizen of Washington.

JOSEPH G. TOTTEN, Citizen of Washington.

MEMBERS EX-OFFICIO OF THE INSTITUTION.

MILLARD FILLMORE, President of the United States.

—————, Vice President of the United States.

EDWARD EVERETT, Secretary of State.

THOMAS CORWIN, Secretary of the Treasury.

CHARLES M. CONRAD, Secretary of War.

JOHN P. KENNEDY, Secretary of the Navy.

SAMUEL D. HUBBARD, Postmaster General.

JOHN J. CRITTENDEN, Attorney General.

ROGER B. TANEY, Chief Justice of the United States.

SILAS HODGES, Commissioner of Patents.

JOHN W. MAURY, Mayor of the City of Washington.

HONORARY MEMBERS.

ROBERT HARE,

BENJAMIN SILLIMAN,

WASHINGTON IRVING.

SEVENTH ANNUAL REPORT

OF THE

BOARD OF REGENTS OF THE SMITHSONIAN INSTITUTION,

*Showing the operations, expenditures, and condition of the Institution, up to
January 1, 1853.*

To the Senate and House of Representatives:

In obedience to the act of Congress of August 10, 1846, establishing the Smithsonian Institution, the undersigned, in behalf of the Regents, submit to Congress, as a report of the operations, expenditures, and condition of the Institution, the following documents:

1. The annual report of the Secretary, giving an account of the operations of the Institution during the year 1852, including reports from the Assistant Secretaries, relative to the library, museum, &c.
2. Report of the Executive Committee, giving a general statement of the proceeds and disposition of the Smithsonian fund, and also an account of the expenditures for the year 1852.
3. Report of the Building Committee, relative to the progress made in 1852 in the erection of the Smithsonian edifice.
4. Proceedings of the Board of Regents.
5. Appendix relative to meteorology, &c.

Respectfully submitted:

ROGER B. TANEY, *Chancellor.*

JOSEPH HENRY, *Secretary.*

REPORT OF THE SECRETARY.

To the Board of Regents of the Smithsonian Institution :

GENTLEMEN : The object of the Annual Report of the Secretary is not only to present to the Regents an account of the transactions of the period which elapses between their successive sessions, but also to make such suggestions as may be important to the future management of the affairs of the Institution, and state such facts in reference to it as may be interesting to the public, or which may furnish a connected history of its transactions.

Since the beginning of the Institution no change has taken place in the policy originally adopted with reference to the system of active operations. The details of this plan were well considered, and its importance as the only means of properly carrying out the intention of the donor fully understood at the first. The theory of the plan was expressed in a few propositions, which have been constantly kept in view, and acted upon as far as the law of Congress and other restrictions would permit.

This plan, although prosecuted under very unfavorable circumstances, has produced results such as to render the name of the Institution favorably known wherever science and literature are cultivated, and to connect it indissolubly with the history of the progress of knowledge in our times. As a proof of this we need only state the following facts :

The Institution has promoted astronomy, by the aid furnished the researches which led to the discovery of the true orbit of the new planet Neptune, and the determination of the perturbations of this planet and the other bodies of the solar system, on account of their mutual attraction. It has also aided the same branch of science by furnishing instruments and other facilities to the Chilian expedition, under Lieut. Gilliss ; and by preparing and publishing an ephemeris of Neptune, which has been adopted by all the astronomers of the world.

It has advanced geography, by providing the scientific traveller with annual lists of the occultations of the principal stars, by the moon, for the determination of longitude ; by the preparation of tables for ascertaining heights with the barometer ; and by the collection and publication of important facts relative to the topography of different parts of the country, particularly of the valley of the Mississippi.

It has established an extended system of meteorology, consisting of a corps of several hundred intelligent observers, who are daily noting the phases of the weather in every part of the continent of North America. It has imported standard instruments, constructed hundreds of compared thermometers, barometers, and psychrometers, and has furnished improved tables and directions for observing with these instruments the various changes of the atmosphere, as to temperature, pressure, moisture, &c. It has collected, and is collecting, from its

observers, an extended series of facts which are yielding deductions of great interest in regard to the climate of this country and the meteorology of the globe.

The Institution has advanced the science of geology, by its researches and original publications. It has made a preliminary exploration of the remarkable region on the upper Missouri river called "the Bad Lands," and is now printing a descriptive memoir on the extraordinary remains which abound in that locality. It has assisted in explorations relative to the distribution in this country of the remains of microscopic animals found in immense quantities in different parts of the United States.

It has made important contributions to botany, by means of the published results of explorations in Texas, New Mexico, and California; and by the preparation and publication of an extended memoir, illustrated with colored engravings, on the sea-plants of the coast of North America.

It has published several important original papers on physiology, comparative anatomy, zoology, and different branches of descriptive natural history; and has prepared and printed, for distribution to travellers, a series of directions for collecting and preserving specimens.

It has advanced terrestrial magnetism, by furnishing instruments for determining the elements of the magnetic force, to various exploring expeditions; and by publishing the results of observations made under its direction, at the expense of the government.

It has collected and published the statistics of the libraries of the United States; and perfected a plan of stereotyping catalogues, which will render effective, as a combined whole, all the scattered libraries of the country.

The Institution has also been instrumental in directing attention to American antiquities, and has awakened such an interest in the subject as will tend to the collection and study of all the facts which can be gathered relative to the ancient inhabitants of this continent. It has also rendered available for the purposes of the ethnologist and philanthropist the labors of our missionaries among the Dakotas, by publishing a volume on the language of this tribe of Indians, and has done good service to comparative philology by the distribution of directions for collecting Indian vocabularies.

It has established an extended system of literary and scientific exchanges, both foreign and domestic, and annually transmits between the most distant societies and individuals, hundreds of packages of valuable works. It has presented its own publications, free of expense, to all the first-class libraries of the world, and thus rendered them accessible, as far as possible, to all persons who are interested in their study. No restriction of copyright has been placed on their re-publication; and the truths which they contain are daily finding their way to the general public, through the labors of popular writers and teachers. The distribution of its publications and its system of exchanges has served not only to advance and diffuse knowledge, but also to increase the reputation, and, consequently, the influence of our country; to promote a kindly and sympathetic feeling between the New World and the Old—alike grateful to the philosopher and the philanthropist.

These are the fruits of what is called the system of active operations of the Institution, and its power to produce other and continuous results is only limited by the amount of the income which can be appropriated to it, since each succeeding year has presented new and important fields for its cultivation. All the anticipations indulged with regard to it have been fully realized; and after an experience of six years, there can now be no doubt of the true policy of the Regents in regard to it.

I am well aware, however, that the idea is entertained by some that the system of active operations, though at present in a flourishing condition, cannot continue to be the prominent object of attention; and that under another set of directors, other counsels will prevail and other measures be adopted, and that what has been done in establishing this system will ultimately be undone. It is true, there is cause of fear that the policy in this respect may be changed, for the system we are here considering requires constant exertion, and is little suited to the tastes and habits of those who seek place and position from mere personal considerations. There is cause to fear, also, from the experience of the past, that the general expenses of a large building, the support of the establishment necessarily connected with it, and the cost of collecting, preserving, and exhibiting specimens of nature and art, will so increase as to paralyze the spirit of activity. Furthermore, the proposition is frequently urged upon the Regents, by persons who have not duly considered the will of Smithson, or who fail to appreciate the importance of the present plan, that a large portion of the income should be devoted to the diffusion of a knowledge of some popular branch of practical art; and there may be some fear that a timid policy on the part of the friends of the Institution will lead them to favor such a plan.

To obviate these tendencies, it is the duty of the present Regents, if they are convinced that the policy of active operations is the true one, to endeavor to correct, as far as possible, the errors which may have been committed in the beginning, and to give the Institution such an impulse in the proper direction, that it cannot deviate from it without immediately arresting the attention of the enlightened public, both at home and abroad, who will not fail to demand, authoritatively, a sufficient reason for the change.

A promise has been made to all persons in this country engaged in original researches, and who are capable of furnishing additions to the sum of human knowledge, that the results of their labors shall continue to be presented to the world through the Smithsonian publications. The honor of the Institution is also pledged to the scientific and literary societies from which it has received exchanges, in this and other countries, that it will continue to send to them at least an annual volume of contributions, of a character similar to those with which they have already been presented. It is on this condition that the library has been so richly favored, not only with the current volumes of transactions, but also, in many cases, from the oldest societies, with full sets of all the previous volumes of their series of publications. Beside this, the libraries of all the colleges and literary and philosophical societies of this country are supplied with full sets of the Smithsonian Transactions; and in this way a foretaste has been given of the fruit of the operations which will tend, in some degree, to insure their continuance.

But if, notwithstanding all this, the Institution is destined to a change of policy, what has been well done in the line we are advocating can never be undone. The new truths developed by the researches originated by the Institution, and recorded in its publications; the effect of its exchanges with foreign countries, and the results of the cataloguing system, can never be obliterated: they will endure through all coming time. Should the government of the United States be dissolved, and the Smithsonian fund dissipated to the winds, the "Smithsonian Contributions to Knowledge" will still be found in the principal libraries of the world, a perpetual monument of the wisdom and liberality of the founder of the Institution, and of the faithfulness of those who first directed its affairs.

Whatever, therefore, may be the future condition of the Institution, the true policy, for the present, is to devote its energies to the system of active operations. All other objects should be subordinate to this, and in no wise suffered to diminish the good which it is capable of producing. It should be prosecuted with discretion, but with vigor; the results will be its vindication.

It was stated in the last report that the Institution had been the contingent legatee of a considerable amount of property. During the past year the facts with reference to this bequest have been investigated, and it appears that Mr. Wynn, of Brooklyn, N. Y., deceased, left a legacy to his wife, and the bulk of his property, valued at \$75,000, to his daughter, a child six years old, on condition that at the death of this daughter without issue, the property should come to the Smithsonian Institution. In making this bequest Mr. Wynn says, in his will: "I know no benevolent institution more useful and appropriate than the Smithsonian Institution at Washington."

This circumstance is highly gratifying to the friends of the Institution, not because it offers a remote possibility of an increase of the funds, but on account of the evidence it affords of the liberal views of the deceased, and of his confidence in the proper management and importance of the Smithsonian bequest. The will of Mr. Wynn induces us to believe that the right administration of the Smithsonian fund will cause similar examples of liberality on the part of wealthy individuals of our country; and in this point of view the responsibility which rests on those who have the direction of the affairs of this Institution is greater than that with reference to the good which the income itself may immediately accomplish.

Though it is scarcely to be expected that many unconditional bequests will be made, yet the example of Smithson may induce the founding of other institutions which may serve to perpetuate other names, and increase the blessings which may flow from such judicious liberality. Man is a sympathetic being; and it is not impossible that Smithson himself may have caught the first idea of his benevolent design from the example of our countryman, Count Rumford, the principal founder of the Royal Institution of London.

Bequests for special purposes, bearing the names of the testators, are not incongruous with the plan of this Institution. Lectureships on particular subjects, annual reports on special branches of knowledge,

provision for certain lines of research, and libraries for general use or special reference, may be founded under the names of those who bestow the funds, and be placed under the direction of, and incorporated with, the Smithsonian Institution. The charge, however, of such bequests ought not to be accepted unless they are sufficient in themselves to meet the expenses of the object contemplated by them, and would not encumber or impede the legitimate operations of the Institution. For example: were a library of a hundred thousand volumes offered, it would be unwise to accept it were it not accompanied by the funds necessary to the erection of a building and to the proper support of the collection.

In July, 1850, a new system of accounts was introduced, which has been continued to the present time. According to this system, every payment is made by an order of the Secretary on the treasurer, who, in turn, gives his check on Corcoran & Riggs, with whom the semi-annual interest and the other income of the Institution are deposited. As often as once a quarter all the bills are examined and referred to their appropriate classes, in presence of all the officers of the Institution. After the accounts are posted, they are referred to the Executive Committee for final examination.

By a reference to the report of the Executive Committee, it will be seen that the funds are in a good condition, and that though during the past year \$14,047 have been paid on the building, there is still on hand, after all the expenditures for publications and other purposes, besides the original bequest, upwards of \$200,000 of accrued interest. It is to be regretted that Congress has not yet acted on the petition requesting the perpetual funding of \$150,000 of the last-mentioned sum. It is highly important that this money should be permanently invested as a part of the principal, so that it can neither be lost nor expended. There are no other means of effectually accomplishing this result except by funding it in the treasury of the United States. The proposition should be pressed upon Congress, though there may be, at present, no very certain prospect of success; for, if the petition be refused, and the money be afterwards lost by improper investment or injudicious expenditure, the responsibility would, in part, rest with the government.

The charge of this fund, and of all the disbursements, is attended with much solicitude. It involves a degree of responsibility which, to a person unaccustomed to large financial transactions, is very onerous. I beg leave, however, in this place, to mention the obligation which the Institution is under to W. W. Corcoran, esq., for the aid which he has, in all cases, afforded in the management of the funds, and the judicious advice which he has always given relative to their investment.

From the report of the Building Committee it appears that the contract for finishing the interior of the wings and ranges, and the rooms of the towers, has been completed. The whole interior of the main building, comprising a rectangular space of two hundred feet long, fifty wide, and about sixty high, remains to be finished with fire-proof materials. It is proposed to divide this space into two stories

and a basement. These stories will be devoted to the library, the museum, and a large and convenient lecture-room.

The business of the Institution would be much facilitated were this part of the building completed. Since Congress has authorized the establishment of a library and museum, it will be well to place all the objects of interest to the public in the main building, and make this exclusively the show part of the establishment, devoting the wings and ranges, and rooms of the towers, to the business operations and other purposes of the Institution. In the present condition of affairs there is no part of the edifice to which the public has not access, and, consequently, business has to be transacted amidst constant interruptions. The loss of time and effective life to which all are exposed who occupy a position of notoriety in the city of Washington, is truly lamentable; and where this is enhanced by facility of access to gratify mere curiosity, the evil becomes scarcely endurable. Progress in business, under such circumstances, can only be made by an encroachment on the hours usually allotted to rest, and that, too, at the expense of wasted energies and shortened days.

Publications.—During the past year the following memoirs, described in the previous reports, have been collected into volumes and distributed to public institutions in this country and abroad:

1. Observations on Terrestrial Magnetism.
2. Researches on Electrical Rheometry.
3. Contributions to the Natural History of the fresh-water fishes of North America.
4. First part of the Marine Algae of the coast of the United States.
5. *Plantæ Wrightianæ Texano, Neo Mexicana*, Part I.
6. Law of Deposit of the Flood Tide, its dynamical action and office.
7. Description of ancient works in Ohio.
8. Occultations visible in the United States during the year 1852.
9. A Grammar and Dictionary of the Dakota language.

The memoir last mentioned occupies an entire volume, the fourth of the Smithsonian series of contributions. The other memoirs are contained in the third volume of the same series.

The remaining memoirs, described in the last report, are still in the press, the printing of them having been delayed by the exhaustion of the appropriation for the year, and by several necessary corrections. A sufficient number of papers will, however, be printed in the course of a few months, with the new appropriation, to complete the fifth volume of Contributions; and if the means prove sufficient, we can readily issue the sixth volume during the present year.

The result of the plan of publication has fully realized the anticipations which were entertained regarding its usefulness. It supplies the food it feeds upon. The appearance in the Contributions of a memoir on any subject immediately directs attention to that subject, and induces other laborers to engage in the same field of exploration. This is particularly manifest in the interest awakened with regard to the

antiquities of our country, and to the languages of the Indian tribes, by the publications of the Institution on these subjects.

The following is an account of the memoirs received since the date of the last report :

Contributions to the History of the Marine Algæ of North America:
By Dr. W. H. Harvey: Part 2.

In the report for 1850 an account was given of the acceptance for publication of an extended and expensive memoir on the Marine Algæ of the eastern and southern coasts of the United States, by Prof. Harvey, of the University of Dublin. The first part of this memoir was published last spring, and has found much favor with the botanical world, as well as with the inhabitants and visitors of our seaboard. The second part of the same memoir is now printed, and will be ready for distribution in the course of a few weeks. It is illustrated by twenty-four plates, and comprises 240 pages of printed matter.

The common name of the class of plants which forms the subject of this memoir, viz: seaweeds, has subjected the Institution to the charge of expending its funds on trifling and unworthy objects; and as the same objection may be made to many of the papers forming the series of Smithsonian Contributions, a few words in vindication of researches of this character may not be inappropriate.

Nothing in the whole system of nature is isolated or unimportant. The fall of a leaf and the motion of a planet are governed by the same laws. The structure of a lichen and the formation of an oak are equally the result of definite plans. It is in the study of objects considered trivial and unworthy of notice by the casual observer that genius finds the most important and interesting phenomena. It was in the investigation of the varying colors of the soap-bubble that Newton detected the remarkable fact of the fits of easy reflection and easy refraction presented by a ray of light in its passage through space, and upon which he established the fundamental principle of the present generalization of the undulatory theory of light. Smithson himself, the founder of this Institution, considered the analysis of a tear as nowise unworthy of his peculiar chemical skill; and well might he so consider it; for the knowledge of the composition of every secretion of the body is of importance, in a physiological point of view, as well as in the preservation of health and the cure of disease. The study of the cause of the spasmodic muscular contraction of a frog, when brought into contact with two pieces of metal, revealed to Galvani the first facts of the branch of science which now bears his name. The microscopic organization of animals and plants is replete with the highest instruction; and, surely, in the language of one of the fathers of modern physical science, "nothing can be unworthy of being investigated by man which was thought worthy of being created by God."

These remarks are particularly applicable to the study of the lower classes of the organic creation. Nature everywhere exhibits economy of means in attaining the most complex and diversified ends. Every result is produced in the simplest manner when viewed in relation to the whole design. All parts of organized beings, whether plants or animals, are formed of a few elementary structures, variously trans-

formed and combined. To obtain a knowledge of the plan and process of organization, we must begin with the most simple combinations, precisely as we would do in the study of mathematical analyses, in which the student commences with the least complicated formula, and gradually proceeds to those of a more involved character. It is for this reason that the study of the algæ, or seaweeds, is of special interest to the physiologist. The framework of every vegetable is built up of cells or little membranous sacks. All vegetable structures, whether wood, bark, or leaves, are formed of aggregations of these cells, differently moulded and united. As we pass along the series of organized forms, we may descend from those of a higher to those of a lower complexity, until, in the class of algæ, we arrive at plants of which the whole body is composed of a few cells strung together; and finally at others, the simplest of organized bodies, whose entire framework is a single cell. Now, it is only by a critical study of these rudimentary forms, and by tracing them into their complex combinations, that man can ever hope to arrive at a knowledge of the laws of organization. We might speak of the importance of a knowledge of the algæ in their application to agriculture and the chemical arts. But what we have here stated will be a sufficient reason for their study, independent of all minor considerations.

The next memoir consists of an account of a series of researches in the comparative anatomy of the frog, by Dr. Jeffries Wyman, of Cambridge, Massachusetts.

The whole animal kingdom may in one sense be considered as the different development of four separate plans of organization, giving rise to four different classes of animals, viz: the Radiata, the Articulata, Mollusca, and Vertebrata. Whatever discovery is made with regard to the organization of any of the species belonging to any one of these classes, tends to throw light on the organization of the whole class, and it is only by the careful study of all the different animals of a class, and a comparison of their analogous parts, that we can arrive at a knowledge of the general laws which pervade the development of the whole. Thus the study of human anatomy is the basis of the investigation of the anatomy of all animals with a back-bone; and conversely, the anatomy of any animal of this class tends to throw light on that of man.

Dr. Wyman's paper gives an account of a series of elaborate investigations of the nervous system of a very common, but, in a physiological point of view, highly interesting animal.

The following are the several points of the memoir:

1. An anatomical description of the more important part of the nervous system.
2. Comparisons between them and the corresponding organs of other animals, both higher and lower in the scale.
3. The metamorphoses which they undergo, especially the spinal chord and some of the cranial nerves, showing the existence of a more complete analogy between the immature condition of Batrachian reptiles and the class of fishes, than has hitherto been noticed.
4. An application of the facts observed in connexion with the cranial nerves to the philosophical anatomy of the nervous system, showing

what is believed to be the true nature of the special sense nerves, as contrasted with other cranial or the true spinal nerves, and the conformity of the other cranial nerves to the common spinal type.

The next communication has the following title: "Plantæ Wrightianæ Texano, Neo Mexicano, Part 2. By Dr. Asa Gray, Professor of Botany in Harvard University."

It has been stated in two of the preceding reports that a small appropriation was made for botanical explorations in Texas and New Mexico, and that the results had been placed in the hands of Dr. Gray for scientific investigation. The first memoir on this subject was described in the last report. It has been printed, and copies distributed to all the working botanists in this country and Europe. It also forms a part of the third volume of the "Smithsonian Contributions."

The object of the present memoir is to give a scientific account of the collections made by Mr. Wright, under the direction of Col. J. D. Graham, U. S. Topographical Engineers, and Major W. H. Emory, of the Boundary Commission, in New Mexico and in Eastern Texas, during the summer and autumn of 1851, and the spring and early part of the summer of 1852.

The description of the plants from this region was previously carried as far as the order *compositæ*. In the present paper, Dr. Gray gives a similar account of the recent collections up to the same point, and reserves the other portions of these collections made by Mr. Wright, with the remainder of the undescribed plants of Fendler and Lindheimer, to be described in a general memoir. One portion of the collection was made from July to November, from El Paso to the Copper Mines of Santa Rita del Cobre, in the southwestern part of New Mexico; and thence into the northern part of the Mexican State of Sonora, as far as Santa Cruz, returning to the Copper Mines by way of Guadalupe Pass, and thence back to El Paso. The plants obtained during this tour are of exceeding interest, and comprise a larger portion of new species than any other collection that has fallen into Dr. Gray's hands. Another portion was obtained in the vicinity of El Paso and the rancho of Frontera, and down the Rio Grande for sixty or seventy miles; also, up the valley of the river as far as Camp Fillmore, and thence into the Orange mountains, which bound the valley on the east. Another collection was made in a hasty excursion to Lake St. Marie and Lake Gustman, in Chihuahua. These several collections afford many novelties; no botanist having previously explored this region at the same season of the year.

It is expected that a full account of the topography and productions of this country will be given in the reports of Colonel Graham and Major Emory.

The interest which attaches to the results of explorations of this kind is not confined to the botanist, but extends to the physical geographer and the political economist. An accurate description of the botany of a region is a sure guide to a knowledge of its power of producing and sustaining vegetable and animal life, and consequently of its value in a commercial and political point of view.

Dr. Leidy, of Philadelphia, has presented a memoir on the extinct

species of the ox of America. In this paper he indicates the former existence of four species of the ox which were probably cotemporaneous with the *Mastodon* and the *Megalonyx*. Fossil remains of these animals have been frequently found in the United States, and descriptions of them are scattered through various works; but no approach has before been made to a correct view of the number and character of the species. The present existing species of ox are found indigenous in every part of the world except South America and Australia, and this is the more remarkable because the domestic ox introduced into the former country by Europeans exists in immense herds on the pampas in a wild state. There is a similar fact with regard to the horse. America at the period of its discovery possessed no indigenous quadruped of this kind, though the climate is highly favorable to its existence, and the remains of two extinct species are frequently found. Two of the species of ox described by Dr. Leidy belong to the genus *Bison*, and one of these is of gigantic size. The other two species belong to a new genus called *Bootherium*.

Another memoir presented by the same author forms an interesting addition to our knowledge of the extinct gigantic sloth tribe of North America. It comprises a description of remains of the *Megalonyx*, *Myiodon*, *Megatherium*, and of a new genus called *Eripodon*.

The scientific world is indebted for the first account of the remains of a large extinct quadruped of the sloth tribe to President Jefferson. Fragments of the bones of this animal were found in a saltpetre cave in Greenbrier county, Virginia. They were regarded with little or no interest by the persons who first observed them; and as they encumbered the saltpetre bed, would probably have been thrown out and suffered to decay, had not the news of their existence reached the ears of the distinguished individual before mentioned. Though devoted to politics, he was too much of a philosopher not to see in these mouldering fragments of a skeleton, objects of high interest connected with the past history of our globe. He described them in a memoir published in the Transactions of the American Philosophical Society at Philadelphia in 1797, and gave to the animal to which they belong the name of *Megalonyx*, or the great claw. The materials, however, in his possession were too scanty to allow of his determining the true character of the quadruped. Dr. Wistar, of Philadelphia, suspected the animal to have been a gigantic sloth; and this was confirmed by Cuvier, from the ample materials for comparison at his command. The original bones described by Jefferson were preserved in the collection of the Philosophical Society; but besides these, Dr. Leidy had access to specimens of the remains of the same animal, found in different parts of the United States. From the study of these he has been enabled to throw much additional light upon the characters of the *Megalonyx*. He considers that the only remains yet known are confined to those found in the United States, and satisfactorily proves that the lower jaw of an extinct quadruped discovered by Dr. Darwin in South America, and referred by naturalists to the *Megalonyx* of Jefferson, does not belong to an animal of the same genus.

The remains of the *Myiodon*, or gigantic sloth, were first discovered by Darwin in his researches in the southern part of South America.

Remains of another species found in North America were described by Dr. Harlan, but were erroneously referred to the *Megalonyx*. Dr. Leidy, in his memoir, describes the collection of the remains of this animal belonging to the New York Lyceum.

The *Megatherium*, which is the largest of all the extinct sloth tribe, when full grown, was more than fourteen feet long, including the tail, and eight feet high. It was first discovered in South America, but has since been found in Georgia; and it was from this locality, the only one in the United States yet known, that the remains described by Dr. Leidy were obtained.

The fourth and new genus of American sloths, called the *Eriptodon* by the author, is established upon a peculiar form of teeth which belonged to an animal of about the size of the *Megalonyx*, the bones of which were also found in Georgia.

Dr. Hays, one of the commission to which this memoir was submitted, remarks in his report, that "the author has not only made valuable additions to our knowledge of an interesting tribe of animals, but has also collected and arranged the facts previously known so as to throw new light on the subject, and to render his memoir an important starting point for future investigators."

Grammar of the Choctaw language.—The publication of the volume on the Dakota language, described in the last report, has called forth another important memoir on comparative philology, namely, a grammar of the Choctaw language, by the Rev. Harvey Byington, for thirty years a missionary among the Indians.

It was referred for examination to Professor Felton, of Cambridge, and to Professor Gibbs, of Yale College, both of whom pronounced it an important addition to ethnology, and warmly recommended its publication. The work was afterwards placed in the hands of Professor W. W. Turner, formerly Professor of Hebrew in the New York Theological Seminary, now librarian of the United States Patent Office. Previous to sending it to the press, the author, after numerous interviews with Professor Turner, concluded that his memoir was susceptible of so much improvement by a further study of the language, that he asked leave to withdraw it for a time. This request was of course granted, and Mr. Byington has returned to his missionary labors, and will again present the work after it has received the desired improvements.

Reports and other minor publications.—Since the date of the last report to the Regents, the following articles have been printed and partially distributed:

1. Directions for making collections in natural history. This is a pamphlet of twenty-four pages, by Professor Baird, and is much called for by the correspondents of the Institution.

2. A work by Professor Jewett, containing an exposition of the system adopted by the Smithsonian Institution for constructing catalogues of libraries, by means of separate stereotype titles, with rules for the guidance of librarians, and examples for illustration. This work is comprised in seventy-eight pages, and though not large, it has been produced at the expense of much time and labor.

3. A second emission of the report on the recent improvements in the chemical arts has been printed, and in part distributed. This work

is stereotyped, and therefore copies can be supplied at any time, at a comparatively small cost.

4. A description of the portraits of the North American Indians in the gallery of the Smithsonian Institution, by the painter of the portraits, J. M. Stauley, esq. This is a pamphlet of seventy-six pages, and contains brief sketches of the characters and incidents in the history of forty-three different tribes of Indians.

5. The first part of the collection of tables to facilitate meteorological and other calculations, by Professor Guyot: this was mentioned in the last report, and has been stereotyped and distributed. It is a very acceptable present to the meteorological observers of the Institution, and other persons engaged in scientific investigations.

Several reports on different subjects are in progress of preparation; but the appropriation for this part of the programme of operations is at present so small, that the completion of them has not been urged upon the authors. The first part of the report on forest trees, by Dr. Gray, of Cambridge, will be ready for the press the latter part of the present or beginning of the next year.

Distribution of publications and exchanges.—Copies of the Smithsonian Contributions to knowledge are sent to all the first-class libraries and literary and scientific societies of the world, and in return the Institution receives an equivalent in Transactions and other publications. After the printing of the first volume of Contributions was completed, a copy of it and of the programme of organization were sent to the principal foreign literary and scientific institutions, with the request that they would exchange publications, on the condition that a volume of equal importance should be presented to them annually. At first the number of responses to this proposition was small; but since the character of the Institution has become known and appreciated, the works received in exchange have rapidly increased in number and importance. The whole number of articles received during 1852 is four thousand seven hundred and forty-four, which is more than three times that of all the previous years. The publications received in many cases consist of entire sets of Transactions, the earlier volumes of which are out of print, and cannot be purchased. They are of use in carrying on the various investigations of the Institution, and of value to the country as works of reference. They ought not to be considered donations to the library, but the products of the active operations, which the Institution is at liberty to dispose of in the manner best suited to further its designs. The principal object, however, of the distribution of the Smithsonian volumes, is not to procure a large library in exchange, but to diffuse among men a knowledge of the new truths discovered by the agency of the Smithsonian fund. The worth and importance of the Institution is not to be estimated by what it accumulates within the walls of its building, but by what it sends forth to the world. Its great mission is to facilitate the use of implements of research, and to diffuse the knowledge which this use may develop. The Smithsonian publications are sent to some institutions abroad, and to the greater majority of those at home, without, any return except, in some cases, that of co-operation in meteorological and other observations. Applications for these publications have now become so nu-

merous that the edition printed will supply but a part of the demand, and it becomes a difficult matter to select the places which will best subserve the object of rendering them accessible to the greatest number of persons who would be benefited by their perusal.

In connexion with the distribution of its own publications, the Institution has adopted an arrangement to promote and establish a more general exchange of literary and scientific productions between this and other countries. For this purpose it receives packages from societies and individuals in the different parts of the United States, and transmits them to England or the continent, and through its agents distributes them to the parties for whom they are intended. It also receives the articles sent in return, and forwards them to those to whom they are addressed. To facilitate this operation, the packages to the Institution are addressed to the collector of customs in New York, and by him, on the certificate of the Secretary, admitted free of duty, and without the delay of an examination.

In carrying out this plan, the Institution is much indebted to the liberal course adopted by the government of Great Britain, and to the ready co-operation of the Royal Society of London. All packages intended for Great Britain, for some parts of the continent, and the East Indies, are directed to the care of the Royal Society, and on the certificate of its president are, by a special order of the government, admitted duty free, and without the delay and risk of inspection. The packages are afterwards distributed by the agent of the Institution, or by those of the society.

This system of exchange does not stop here. The Royal Society has adopted the same plan with reference to Great Britain, and all other parts of the world; and the Smithsonian Institution, in turn, becomes an agent in receiving and distributing all packages the society desires to send to this country. A general system of international communication, first started by the Institution for the distribution of its own publications, has thus been established, which will tend to render the results of the labors of each country in the line of literature and science common to all, and to produce a community of interest and of relations of the highest importance to the advance of knowledge, and of kindly feeling "among men."

The results of the operations of the system of foreign exchanges during the year 1852, are exceedingly gratifying. The whole number of packages sent out, including the Smithsonian publications, is 572, containing 9,195 articles, and weighing 9,855 pounds. There have been received, in addition to the 4,745 articles for this Institution, 637 packages, containing an unknown number of volumes, for other institutions in this country. The details of the business of the exchanges are intrusted to Professor Baird, and I would refer, for a particular statement of all the facts connected with it, to his report, herewith submitted.

The planet Neptune.—It has been mentioned in the last annual reports that Mr. S. C. Walker, of the U. S. Coast Survey, prepared, at the expense of the Smithsonian Institution, a memoir containing an exposition of the elements of the true orbit of the planet Neptune, and that from this orbit and the mathematical investigation of Professor Pierce

of Cambridge, an ephemeris of Neptune had been deduced, which has been accepted by all the astronomers of the world, as the only certain guide to the position of the planet. This ephemeris was prepared for 1848 and 1849, at the expense of the Institution; but since the last mentioned date it has been calculated at the expense of the appropriation for the Nautical Almanac, while the cost of printing and distribution has been defrayed by the Institution. The same arrangement will continue for the ephemeris of 1853 and 1854, after which the whole will be turned over to the Nautical Almanac.

Occultations.—The moon in her passage eastward around the earth continually passes between us and the fixed stars or planets which lie in her path, and obscures them from our view. The instant of the disappearance of a star behind the moon, or the occultation of a star, as the phenomenon is called, can be noted by observers widely separated from each other, and hence this phenomenon becomes a ready means of determining the difference of longitude between two places. The employment of occultations for fixing geographical positions is easy, and leads to accuracy in the results. The telescope may be of moderate size, and requires no accurate adjustment; the position assigned it may be such as to suit the convenience of the observer. The frequent occurrence of occultations renders the use of them of great importance to the travelling observer, and the publication of lists of these, and of tables for their reduction, is essential to the improvement of geography. They are of particular value in this country on account of the frequent exploring and surveying expeditions now carried on by our government and our people, and to be continued for an indefinite time in the extensive territory of the West and the newly acquired possessions of the Southwest. Tables of occultations were prepared and published at the expense of this Institution for 1849 and 1850, but for subsequent years the expense of their preparation has been defrayed by the appropriation for the Nautical Almanac, under the direction of Lieut. Davis, while the composition and press-work is still at the expense of the Institution. As soon as the Nautical Almanac is fully commenced, the publication of these tables will be entirely relinquished to this enterprise of the government.

Up to 1850 the tables published were of occultations visible in the United States. Since, however, the preparation of the tables has been in charge of the director of the Nautical Almanac, the list has been so extended as to make it useful to geographers in general as well as to those of the United States. This extension was rendered important on account of the surveys undertaken by our government in other parts of the globe. Also, a table has been added, giving the correction of the latitude due to the oblate spheroidal figure of the earth.

When we consider the character and condition of the vast continent of North America, which it belongs to us chiefly to reduce to a habitable and civilized state, we shall perceive that the practical scientific explorer has no higher duty than to settle the geography, the magnetism, the natural history, and the climate of these regions.

Researches.—At the session of the Regents in 1849, an appropriation was made to supply Lieutenant Gilliss with a telescope for his expedition to Chili, to aid him in his observations for a new determination

of the distance of the inferior planets, and, consequently, of the actual distances of the several members of the solar system. A subsequent appropriation was made for the purchase of an astronomical clock for the same purpose. The first appropriation was repaid to the Institution by a grant from Congress to cover the expenses of the expedition, and the second will also be reimbursed by the purchase of the clock and all the other instruments by the Chilian government, for the permanent establishment of an observatory in that country.

By these operations, the Institution has been the means of rendering essential aid to science, without, in the end, diminishing the amount of its income. Lieutenant Gilliss, after voluntarily exiling himself from his family and his country for four years, has returned with a rich harvest of materials in astronomy, meteorology, magnetism, and natural history, in the reduction, generalization, and description of which the Institution may also furnish important aid.

The sum of one hundred and fifty dollars has been advanced to Prof. C. B. Adams, of Amherst College, to defray in part the expense of an exploration of the molluscs of the West Indies. This subject is intimately connected with the geological changes which have taken place on the surface of our globe; and it was particularly with reference to this point that Prof. Adams has undertaken these researches. This is his second expedition to the same regions; and in both instances the Smithsonian Institution has seconded his proposition, and warmly recommended it to the favorable consideration of the trustees of Amherst College. A small sum appropriated in this way, though not enough in itself to produce much effect, is still sufficient to complete the amount to be raised, and thus serve to determine the commencement of the enterprise.

Meteorology.—The general system of observations relative to the meteorology of the continent of North America, described in the previous reports, has been continued and extended. It consists at present of the following classes, viz:

1. The Smithsonian system proper, made up of voluntary observers in different parts of the United States, who report immediately to the Institution.

2. The system of observations of the University of the State of New York, re-established under the direction of this Institution, and supported by the State of New York.

3. The system of observations instituted under the direction of this Institution, by the State of Massachusetts.

4. The extended system of observations made at the several military posts of the United States, under the direction of the Surgeon General of the army.

5. Separate series of observations by exploring and surveying parties, in some cases directed, and in part furnished with instruments, by this Institution.

6. Meteorological records from British America, consisting of observations made at the various posts of the Hudson's Bay Company, and at the residence of private individuals in Canada.

In the first three of these classes there are about two hundred observers distributed over the entire continent. In the older States they

are very thickly distributed, and they are entirely wanting in none. Texas, Arkansas, Indian Territory, Missouri, Iowa, and Minnesota, have each competent and reliable observers reporting directly to the Smithsonian Institution, in addition to those at the military posts, which are in the same regions.

Farther westward, and more widely separated, the observers at the military posts, and those of surveying and exploring parties, continue the connexion of the system to the Pacific coast, where the number of military posts is greater, and private observers are again found.

The New York system embraces twenty-five academies as stations, furnished with new and reliable instruments at the expense of the State.

In Massachusetts twelve stations are furnished in like manner, of which eight have reported.

In 1852 ninety-seven military posts reported meteorological observations, and for 1853 the number will be greater rather than less.

The whole number of stations and observers available in making the deductions for 1852 was three hundred and fifty; and this number, either reporting directly to the Institution or furnishing their observations for its use, may be relied upon for the current year.

Besides the observations derived from this general system, a large collection has been procured from individuals in different parts of the country, who have kept records of the weather, in some cases for many years. This collection was obtained by issuing a circular from the Institution, requesting copies of any records which might have been kept relative to the climate of this country. The amount of information received in answer to this circular was far greater than was expected, and much more valuable matter was thus called forth than was previously known to exist.

In order that the materials procured from the aforementioned sources may be rendered available for scientific or practical purposes, it is necessary that they should be reduced, discussed, and arranged for publication. This work was commenced at the close of 1851, and has been prosecuted with considerable vigor during the past year. It was given by me in charge to Mr. Lorin Blodget, of western New York, who has engaged in the work with much ardor, has devoted to it his whole time and attention, and evinced an unusual degree of talents for investigations of this character.

The results which have thus far been obtained are of interest to the science of meteorology, and valuable to the practical arts of life. The following is a descriptive list of the deductions presented in a tabular form:

Temperature Tables.

1. Tables of general mean temperature for a series of years, embracing a summary of the annual means for the years 1849, 1850, 1851, and 1852, with a general summary of reliable observations of mean temperature on the North American continent.
2. Tables of mean temperature for each month, season, and year, for 1849, 1850, 1851, and 1852, embracing 273 stations in 1849; 284 in 1850; 300 in 1851; and 396 in 1852.

3. Tables of mean temperature at each observed hour for the same periods and the same stations.
4. Tables of the monthly extremes of temperature, with the range above and below the monthly mean, for the same periods and the same stations.
5. Collection of tables of temperature at different stations, observed for a series of years.
6. Miscellaneous tables of temperature, not conforming entirely to either of the above divisions.

The first class of tables embraces six hundred and seventy stations, distributed over the entire continent, from the West Indies and Mexico to the Polar seas.

The second class has a more limited range, and is generally confined to the United States and its territories, as observed by the military system, and that of the Smithsonian Institution, with a few stations in Canada and the British possessions on this continent.

The third class of tables is nearly the same in extent with the preceding, and for three complete years—1850, 1851, and 1852.

The fourth class is of the same extent and time.

The fifth is a climatic arrangement of tables from various stations, extending in continuous series over periods varying from five to sixty years.

Tables of Precipitation.

1. Tables of distribution of precipitation in rain and melted snow for each month, season, and year, for 1849, 1850, 1851, and 1852.
2. General tables of precipitation for a series of years, containing the results of the preceding tables, with a general summary of all reliable and accessible observations of fall of rain on the North American continent. These tables give results from about four hundred stations, principally in the United States, its Territories, and the West Indies.
3. Irregular tables and single series, extending over long periods, and where reliable observations have been made.

A series of charts has been constructed to exhibit the distribution of temperature on the North American continent, by isothermal lines; and also another series, illustrative of the distribution of precipitation for each month, season, and year of 1850, 1851, and 1852, and for the periods given in the general tables. It is proposed to present these results to Congress as a part of the annual report of the Regents, and as the first fruit of the labors of the Smithsonian Institution on the subject of meteorology.

Catalogue of Libraries—In addition to the preparation of the work previously mentioned, Professor Jewett has continued his experiments on the new process of stereotyping, to be used in his system of cataloguing. Much difficulty and delay have been experienced in the prosecution of these experiments, on account of the want of workmen to construct the peculiar apparatus required. The services of an ingenious and skillful artisan have, however, been secured, and the process is now brought to such a state of completeness that it can be applied

with certainty, and abridgment of labor, to produce the best specimens of typography.

The system of catalogues described in previous reports, though future experience may suggest other improvements, is now apparently perfect in all its details. A stereotyping office has been established in the basement of the west wing of the Smithsonian building, and the Institution is ready to commence the formation of a general catalogue of the principal libraries of the United States. The commission to which the catalogue system was referred, recommended that measures be taken to procure the preparation and printing of the catalogue of the Library of Congress. The cost of the first collection of stereotype titles can be best borne by this library, and it will be the first to reap the benefit of this invention. The stereotype blocks of the titles can be preserved in the Institution, and a new catalogue annually furnished at a small expense, with all the additions inserted in their proper places. The same titles will be employed in printing the catalogues of other libraries, and the new titles which may be prepared for these will, in turn, be used for the Library of Congress.

I beg leave to commend this subject to the immediate consideration of the Board of Regents. The whole plan is in perfect harmony with the active operations, and has always received my cordial commendation. The Institution has incurred the expense of reducing it to practice so far as it depends on mechanical arrangements, and it now only requires to be applied, to realize all the benefits which have been anticipated in regard to it, to do honor to the Institution and to confer deserved reputation on its author.*

Library.—During the last year the library has received important additions from the books presented in exchange for the volumes of the Smithsonian Contributions and other publications. The whole value of the works thus received during the year, according to the estimate of Professor Baird, is not less than from four to five thousand dollars. From this source alone a highly interesting and valuable collection of books, pertaining to all branches of positive knowledge, will, in time, be obtained. The reputation which the publications of the Institution have given it abroad, has induced individuals to present quite a number of valuable works to the library. For an account of the whole, I must refer to the report of Prof. Jewett, herewith submitted. The library has also been increased by the purchase of such books as were required in the operations of the Institution, and with a series of scientific and other periodicals.

The copyright law is still in existence, and the library has received, during the past year, the usual number of articles from this source. The remark, however, may again be made with truth, that the action of this law, as it now exists, imposes a burden on the Institution from which it should be relieved.

The whole number of articles, according to the report of Professor Jewett, now in the library, is twenty-one thousand seven hundred.

* NOTE.—Since this report was presented to the Board of Regents, Congress has appropriated three thousand dollars to commence the catalogue of its library on the stereotype plan, under the direction of the Smithsonian Institution.

Museum of Natural History.—The additions to the collection in natural history, under the persevering efforts of Professor Baird, have increased in a compound ratio over those of previous years. Large additions will also be made by the exploring expeditions which are about to leave for the different parts of this continent and distant seas, but the expense of preparing and transporting these, it is hoped will be defrayed by the general government. For a detailed account of the number and variety of the specimens collected, I must refer to Professor Baird's report accompanying this communication.

Gallery of Art.—Besides a library, a museum, and lectures, the act of Congress establishing the Smithsonian Institution directed the formation of a gallery of art. The only articles belonging to the Institution which have been yet collected, in accordance with the last-mentioned regulation of Congress, are the valuable series of engravings by the old masters, described in a previous report. One of the original propositions of the programme is that of encouraging art, by providing a suitable room for the exhibition of pictures free of expense to the artist. In accordance with this, the large room in the west wing will be devoted to this purpose. It now contains a very interesting series of portraits, mostly full-size, of one hundred and fifty-two North American Indians, with sketches of the scenery of the country they inhabit, deposited by the artist who painted them, Mr. J. M. Stanley. These portraits were all taken from life, and are accurate representations of the peculiar features of prominent individuals of forty-three different tribes, inhabiting the southwestern prairies, New Mexico, California, and Oregon. The faithfulness of the likenesses has been attested by a number of intelligent persons who have visited the gallery, and have immediately recognised among the portraits those of the individuals with whom they have been personally acquainted. The author devoted to the work of obtaining these pictures ten years of his life, and perseveringly devoted himself to his task in the face of difficulties and dangers which enthusiasm in the pursuit could alone enable him to encounter. The Institution has published a descriptive catalogue of these portraits, which are of interest to the ethnologist as representatives of the peculiar physiognomy, as well as of many of the customs, of the natives of this continent.

Lectures of the Institution.—Public lectures have become one of the characteristics of the day, and next to the press, perhaps, tend more than any other means of diffusing knowledge, to impress the public mind. The liberal price paid by the Lowell Institute, and some of the associations in our large cities, induces men of reputation to devote themselves to the preparation of popular lectures. In some parts of the country a number of adjacent cities or villages enter into an arrangement by which the same lecture may be repeated, in succession, at each place; and in this way the amount paid becomes sufficient to call forth the best talent. A plan of this kind has been adopted by the Athenæum of Richmond, Virginia, with reference to the lectures before the Smithsonian Institution, the effect of which has been mutually beneficial. Popular lectures appear better adapted to present literary and historical facts, and to give information relative to subjects of art and of morals, than to impart knowledge of scientific principles. These

require more attention and continuous thought than can be generally expected from a promiscuous audience. Hence the scientific lecturer frequently aims at a brilliant display of experiments, rather than to impress the mind with general principles.

Local lectures are too limited in their influence to meet a liberal interpretation of the will of Smithson; yet they were ordered by Congress, and are calculated to do more good in this city than in any other part of the Union.

In selecting lecturers the consideration of mere popular effect has not been regarded. The persons chosen have been such as to give weight to the lecture, and to reflect credit on the Institution. The object has been to give instruction rather than amusement—to improve the public taste, rather than to elicit popular applause. The Institution, to be respected, must maintain a dignified character, and seek rather to direct public opinion than to obtain popularity by an opposite course.

The moral effect which the lectures have on the city of Washington cannot be otherwise than beneficial. When the weather will permit, the room is every evening crowded before the hour of commencement with an intelligent audience. The lecturers have generally been persons from a distance, who have expressed surprise to find such a large and respectful attendance in a city which is commonly thought to be exclusively devoted to politics and amusement. The plan of inviting gentlemen of reputation and influence from a distance renders the Smithsonian operations familiar to those best qualified to appreciate their value, and best able to give a correct account of the character of the Institution in their own districts of country, as well as to vindicate its claims to the confidence and friendly regard of the public. The results of this course, and the distribution of the volumes of Contributions to colleges and other institutions, it is hoped, will so establish the Institution in the good opinion of the intelligent and influential part of the community, that it may bid defiance to the assaults of those who are ignorant of its true character, or are disappointed in not sharing its honors without the talents or the industry to win them.

The following is a list of the titles of lectures given during the last session of Congress, with the names of the gentlemen by whom they were delivered :

A course of three lectures by Dr. E. K. Kane, U. S. N., on Arctic exploration.

A course of three lectures by President Mark Hopkins, of Williams College, on method applied to investigation.

A course of four lectures by Prof. W. B. Rogers, of the University of Virginia, on the phases of the atmosphere.

A course of twelve lectures by Dr. Benjamin Silliman, sr., of Yale College, on geology.

A course of two lectures by Prof. C. C. Felton, of Harvard University, on Greek literature.

One lecture by Job R. Tyson, esq., of Philadelphia: Queen Elizabeth and Oliver Cromwell, their characters and times, contrasted and compared.

A course of six lectures by Dr. B. A. Gould, jr., of Cambridge, on the recent progress of astronomy.

A course of six lectures by Prof. Louis Agassiz, of Cambridge, on the foundation of symmetry in the animal kingdom.

A course of six lectures by Prof. B. Silliman, jr., on the four ancient elements—earth, air, fire, and water.

Omitted from previous report: A course of twelve lectures by Dr. Henry Goadby, on the structure and functions of insects.

In the last report to the Regents, some general remarks were made relative to the library and museum, and nothing has since occurred to change the opinions then expressed; on the contrary, the experience of another year has tended to confirm these opinions, and to clearly exhibit the fact that it will be impossible to continue with the present income some of the most important operations, and rigidly adhere to the resolution of the Regents of 1847, to devote one half of the whole income to the library and museum, besides all the expenditures still required on the building for the accommodation of these objects. By a reference to the annual reports of the Executive Committee, it will be seen that the general incidental expenses have continually increased from year to year, and it is evident that they must continue to increase in a geometrical ratio, on account of the greater repairs which, in time, will be required on the building. After deducting from the income the cost of repairs, lighting, and heating; of messenger, attendants, and watchmen; of stationery, transportation, and postage; after dividing the remainder by two, and deducting from the quotient the expense of the public lectures, the final sum to be devoted to the most important, and, indeed, the only legitimate object of the bequest, is exceedingly small.

The attempt has, however, been made in good faith to carry out the resolution of February, 1847; and if items which may properly be charged to the library and collections were added to this side of the account, the balance up to the present date would be in favor of the active operations. But the plan has not been found to work well in practice. The income is too small to properly support more than one system of operations, and therefore the attempt to establish and sustain three departments, with separate ends and separate interests, must lead to inharmonious action, and consequently to diminished usefulness.

However proper such a division of the income might have been in the beginning, in order to harmonize conflicting opinions, and to submit with proper caution the several proposed schemes to a judicious trial, the same considerations do not now exist for its continuance; changes have since occurred which materially alter the conditions on which the resolution was founded. The plan of active operations was not at first fully understood even by the literary men of the country. It was considered chimerical, and incapable of being continued for any length of time; and hence it was thought important to provide for the means of falling back upon a library and collections. The experience of six years has, however, established its practicability and importance, and it is now considered by the great majority of intelligent persons who have studied the subject the only direct means of realizing the

intention of the donor. Again: the building was to have been finished in five years, and the income after this was to be increased by the interest on the remaining surplus fund; but the Regents have found it necessary for the better security of the library and museum to add fifty thousand dollars to the cost of the edifice; and ten years will have elapsed from the beginning, instead of five, before any income from the surplus fund will be available. This additional expense is not incurred for the active operations, and the question may be asked whether they ought to bear any part of this additional burden. Furthermore, at the time the division was made, it was thought obligatory on the part of the Institution to support the great museum of the exploring expedition; but the Regents have since concluded that it is not advisable to take charge of this collection; and Congress, by its appropriation for the enlargement of the Patent Office, concurred in the opinion expressed in the Senate by the Hon. Jefferson Davis, that it was a gift which ought not to be pressed upon the Institution. The inquiry may also, in this case, be made whether it is advisable in the present state of the funds, and the wants of the active operations, to expend any considerable portion of the income in the reproduction of a collection of objects of nature and art. Again: the active operations are procuring annually for the library, by exchange, a large number of valuable books, which, in time, of themselves will form a rare and valuable collection, and even if the division of the income is to be continued, a sum equal in amount to the price of these books ought to be charged to the library, and an equal amount credited to the active operations.

Though a large library connected with the Institution would be valuable in itself, and convenient to those who are in the immediate vicinity of the Smithsonian Building, yet, as has been said before, it is not essentially necessary to the active operations. It would be of comparatively little importance to the greater number of the co-laborers of the Institution, who are found in every part of the United States, and are not confined even to these limits. The author of the great work on the American Algæ, now publishing in the Smithsonian Contributions, is a resident member of Trinity College, Dublin; and but few of the authors of the Smithsonian memoirs reside in Washington. The libraries, therefore, of the whole country, and in some cases of other countries, are at the service of the Institution, and employed for its purposes.

Similar remarks apply to the museum. It is not the intention of the Institution to attempt to examine and describe within the walls of its own building all the objects which may be referred to it. To accomplish this, a corps of naturalists, each learned in his own branch, would be required, at an expense which the whole income would be inadequate to meet. In the present state of knowledge, that profound attainment necessary to advance science can only be made by an individual, however gifted, but in one or two narrow lines; and hence a number of members are required to complete a single class in any of the learned academies of Europe; and therefore the plan which was once proposed, of establishing on the Smithsonian fund an academy of associated members, was entirely incompatible with the limited income of the Institution. The more feasible and far less

expensive organization was adopted, of referring all scientific questions of importance, as well as objects of natural history, for investigation to persons of reputation and learning in different parts of the United States, and perhaps, in some cases, in foreign countries. By the operation of this plan, which has been found eminently practicable, the collections, as well as the libraries of the whole country, are rendered subservient to the use of the Institution.

There can be but little doubt that, in due time, ample provision will be made for a library and museum at the capital of this Union worthy of a government whose perpetuity depends upon the virtue and intelligence of the people. It is, therefore, unwise to hamper the more important objects of this Institution, by attempting to anticipate results which will be eventually produced without the expenditure of its means.

The prominent idea embraced in the Smithsonian organization, is that of coöperation and concerted action with all institutions and individuals engaged in the promotion of knowledge. Its design is not to monopolize any part of the wide fields of nature or of art, but to invite all to partake in the pleasure and honor of their cultivation. It seeks not to encroach upon ground occupied by other institutions, but to expend the funds in doing that which cannot be as well done by other means. It gives to the words of Smithson their most liberal interpretation, and "*increases and diffuses knowledge among men*" by promoting the discovery of new truths, and by disseminating these in every part of the civilized world.

Respectfully submitted,

JOSEPH HENRY,
Secretary Smithsonian Institution.

REPORT OF THE ASSISTANT SECRETARY, IN CHARGE OF THE LIBRARY.

PRESENTED JANUARY, 1853.

To the Secretary of the Smithsonian Institution:

SIR: The following table exhibits the number of books and other articles added to the library during the year 1852, with the sources from which they have been received:

	Books.	Pamphlets.	Parts.	Engravings.	Maps.	Music.	Drawings.	Other articles.	Totals
By purchase.....	641	918	1,568	-----	-----	-----	-----	-----	3,127
By exchanges and donation.....	1,481	1,935	171	10	1,693	-----	-----	41	5,336
By copyright.....	476	96	26	15	10	692	9	19	1,343
Totals.....	2,598	2,949	1,765	25	1,708	692	9	60	9,806

The present extent of the various collections in the library is shown by the following table:

	Books.	Pamphlets.	Parts.	Engravings.	Maps.	Music.	Drawings.	Other articles.	Totals.
By purchase.....	3,873	957	1,568	1,335	2	-----	-----	-----	7,735
By exchanges and donation.....	2,657	3,872	171	58	1,725	-----	30	41	8,554
By copyright.....	2,304	213	26	24	51	1,826	9	86	4,539
By deposit.....	873	-----	-----	-----	-----	-----	-----	-----	873
Totals.....	9,707	5,042	1,765	1,417	1,778	1,826	39	127	21,701

From these statements it will be seen that the library has nearly doubled in size during the year. Its greatest increase has been by exchange. The accessions from this source are nearly five times in number those of the preceding year. They may be considered but the first fruits of the system of scientific and literary exchange established and sustained by this Institution. They show, also, that the

benefits derivable by the library from its connexion with the system of active operations had not been over-estimated. A considerable portion of the money expended in publications returns in the shape of books for the library. These, again, are constantly increasing the efficiency and interest of the publications.

The value of the books received by exchange cannot be estimated by their numbers, or even their nominal price. They are works of the first importance to the scientific student, and which it is very difficult to procure by purchase, even with large funds at command.

The most important of the works procured by exchange are the memoirs and proceedings of learned societies. A more particular account of these is given in the report of Professor Baird. It is seldom the case that a society which has been in operation many years, is in possession of the earlier volumes of its memoirs. On this account many of our sets are incomplete. The deficiencies can only be supplied by purchase, as opportunities may occur. Our collection of the later publications of learned societies throughout the world is by far the most extensive in this country, and we hope it will, before many years, be made complete.

Among other costly and important works which have been presented to the library during the year, the following deserve to be particularly mentioned:

Voyage autour du Monde sur la corvette la Favorite, 1830-'31-'32, in 5 vols. 8vo., with 84 maps, charts, and engravings, in folio.

Voyage autour du Monde sur la frégate la Venus, 1836-9, in 9 vols. 8vo., with four atlases, in folio, of maps and illustrations.

Voyage au Pole sud sur les corvettes L' Astrolabe et la Zélée, 1837-40, in 17 vols. 8vo., with illustrations of scenery and natural history in 85 livraisons folio, and a hydrographical atlas of 57 sheets.

Voyage autour du Globe de la frégate la Thétis et de la corvette L'Espérance, 1824-26, in 2 vols. 4to., with an atlas in folio.

These works published by the French government are superbly printed and illustrated, and are of great scientific value. They were presented by the "Ministère de la Marine," in exchange for our own publications sent to the library of that department.

Gay's *Historia física y política de Chile*, in 14 vols. 8vo. and 1 vol. folio of plates, an elegant work of great value, has been presented by the government of Chili, through Lieutenant J. M. Gilliss.

A donation from the Honorable East India Company, in 29 volumes, mostly in quarto, comprises grammars and dictionaries of the Mah-ratta, Malayalin, Burmese, Murathee, Teloo-goo, Carnataca, Bengale, Sanskrit, and Hindustani languages, besides other works of great interest to the philological student.

The Board of Admiralty of the British government have presented to the Institution 1,574 of the charts, plans, and views published by order of the Lords Commissioners. This is believed to be the largest collection of them in America, and may truly be considered a munificent gift.

From several of the States of the Union we have received series of public documents, particularly from New York and Massachusetts. Nor have we been forgotten by the most distant members of the Confederacy—California, Florida, and Minnesota—to which the publications

of the Institution were previously sent. Besides donations from governments and from public societies, we have received from individuals many costly and valuable gifts.

To Mr. Henry Stevens and Dr. J. G. Flügel, our agents in London and Leipsic, we are indebted for a large number of books and pamphlets, presented by themselves, or by others at their instance. Among Mr. Stevens's donations are nearly one thousand pamphlets, most of them formerly belonging to Mr. Petty Vaughn, of London. Many of these relate to American affairs, and are curious, rare, and important.

Messrs. Meissner & Richter have presented, through Dr. Flügel, a copy of Gailhabaud's *Denkmäler der Baukunst*, in 4 volumes 4to., a costly and copiously illustrated work. The publishers of Pierer's *Universal Lexicon* have, at the suggestion of Dr. Flügel, sent to us a copy of the new edition, in 20 volumes 8vo. It is a sufficient evidence of the merit of this work, that within six years from the completion of the first edition it has passed through three editions in Germany. It meets, better than any other work, the idea of a Universal Lexicon, to which one may resort for concise and accurate accounts of every subject in which he may be interested. Encyclopædias have been mostly devoted to elaborate treatises, rather than to brief explanations, furnishing ready answers to the thousand questions which arise in daily reading and study.

The largest and most important of the gifts which we have received from individuals is that from James Orchard Halliwell, esq., the distinguished archæologist. This gentleman has presented to the Institution an extremely curious, interesting, and instructive collection of MS. bills, accounts, inventories, legal instruments, and other business papers, extending from 1632 to 1792, neatly arranged and handsomely bound in 54 volumes, mostly of folio size. This collection may justly be said to be unique of its kind. It is of interest not only to the antiquary and the collector of curious relics of olden times, but as an authentic record of prices for more than 160 years it is of great value. As a picture of the mode of life and domestic habits and expenses of English families of former generations it is a most instructive record. Its character cannot be better described than in the elegant letter of presentation:

AVENUE LODGE, BRIXTON HILLS, NEAR LONDON,
28th October, 1852.

SIR: I have the pleasure of offering for your acceptance, for the use of the Smithsonian Institution, a collection of documents formed for the purpose of illustrating the history of prices between the years 1650 and 1750. The collection, regarded as a collection, is, I believe, unique in its kind, although many manuscripts of the same description are to be found dispersed amongst the vast stores of the British Museum and other libraries in this country. It consists of about seven thousand original papers, bound in fifty-four volumes, including bills, accounts, and inventories, respecting commercial and domestic articles of nearly every description.

It will afford me very great pleasure if the allocation of these papers at Washington prove of use at any time to the literary inquirers of

your great nation. Without incurring the imputation of falling into the ordinary error made by collectors, in attaching a fictitious value to relics which have necessarily required the expenditure of considerable time and exertion to bring together, it may, perhaps, be allowed me to entertain a hope that these fragments of an earlier age, now confided to your care, may be hereafter regarded of importance in the list of materials which will some day assist in producing a history of social progress.

Mr. Henry Stevens, F. S. A., the agent to the Smithsonian Institution in England, has kindly undertaken to forward the collection to you on an early opportunity.

I feel sure you will excuse the liberty I am taking in addressing you on this subject; and I have the honor to be, sir,

Your obedient, faithful servant,

J. O. HALLIWELL.*

Prof. JOSEPH HENRY,

Secretary of the Smithsonian Institution, Washington.

*Since the above account was written, we have received from the munificent donor of this collection a quarto volume of one hundred and twenty pages, beautifully printed on drawing paper, with the following title:

"Some account of a collection of several thousand bills, accounts, and inventories, illustrating the history of prices between the years 1650 and 1750. Presented to the Smithsonian Institution, Washington, by James Orchard Halliwell, esq., F. R. S., Hon. M. R. I. A., Hon. M. R. S. L., F. S. A., etc., Brixton Hill; printed for private circulation only: 1852."

This work was printed at Mr. Halliwell's expense, and is of itself a volume of great value and interest. Forever honored be such liberality!

The preface to this volume we quote entire:

PREFACE.

The unique collection of commercial and domestic statistical documents—a very brief notice of which, accompanied by a few extracts to exhibit their general character, will be found in the following pages—was formed years ago with the view of assisting in the compilation of a projected work on the history of prices. That design has now been abandoned; but the anxiety of the collector that the records thus brought together should be preserved in a permanent library for the use of future inquirers, has resulted in the presentation of them to the people of the United States, who, beyond all others, are most likely to produce a writer on the history of commerce willing to make use of materials which will strikingly illustrate the immense commercial progress the world has achieved during two centuries.

The collection includes about seven thousand separate documents, bound in fifty-four volumes, in the following order:

Vols. I to XXIX.—A collection of several thousand bills, accounts, and inventories, commencing with the year 1632, but chiefly relating to the period between the years 1660 and 1750. There are included amongst them, a considerable number of the autograph private account-books, written on small leaves in a minute hand, of Sir John Newton, Bart., of Barr's Court, Co. Gloucester. In the twenty-ninth volume are a few documents of a later date. 4to.

Vols. XXX to XXXII.—Three volumes containing undated documents, including a large proportion of early and curious tradesmen's bills. 4to.

Vol. XXXIII.—Account-book of J. Heywood, commencing December 24, 1694. Narrow folio.

Vol. XXXIV.—"The accounts of the Honorable John Archer, esq., from the laste ajusting of the Essex book for Coopersale, being June the 30th, 1703." Some of these accounts are very copious. Fol.

Vol. XXXV.—A household account-book of the Archer family, 1709 to 1711. Small 4to.

Vol. XXXVI.—Account-book of a person of the name of Pelham, commencing in 1707 and extending to 1716. 4to.

Vol. XXXVII.—"Robert Garlicke's account in Benham farme," commencing September 29, 1738. Fol.

Vol. XXXVIII.—A volume lettered "Estates of the Baccu family," but including various inventories. Fol.

The number of articles received under the copyright law is somewhat larger for the last, than for the preceding year. It has increased from year to year since the organization of the Institution, although no special efforts have been made to induce publishers to comply with the law. Every book which has been received has been immediately and carefully recorded, and a certificate of deposit sent (generally by return of mail) to the depositor. The same care has been exercised for the most insignificant as for the most important; and has been dictated by a sense of justice to the publishers, inasmuch as the deposit was supposed to be essential to the perfection of their title. Had the articles thus sent been regarded merely as donations to the library, many of them might have been differently treated. Loose sheets of music, school-books, and many "cheap publications," might merely have been placed together in some spot where they would long have remained undisturbed. For themselves, and as parts of an imperfect collection, they were hardly worth recording. It should be particularly observed that any article, however apparently worthless, acquires value and importance as an integral part of a complete collection. A collection of all the productions of the American press would, if perfect and entire, teach lessons which could not be gleaned from its parts.

It would show the *extent* of the literary labors of the time.

Vol. XXXIX.—Accounts for laboring work done for Sir John Webb at Adstocke, 1686. Fol.

Vol. XL.—"A cash booke for moneys received and paid for my master, William Archer, esq., per George Burton, 1707." Fol.

Vol. XLI.—An account-book of the Archer family, commencing in the year 1691. Narrow fol.

Vol. XLII.—The account-book of Thomas Brook of Cold Hall, Co. Suffolk, 1713. Fol.

Vol. XLIII.—"The accounts of my charge and all receipts for rents and other concerns for my master, the Hon. Sir John Newton, Bart., from and since the 11th of June, 1716, by me, John Richardson." Fol.

Vol. XLIV.—"The accounts of the Honoured Squire Archer, from my first going downe into Suffolke, June the 13th, 1692, to looke after those consarns for your worship." Fol.

Vol. XLV.—Household account-book, 1715. 4to.

Vol. XLVI.—A small account-book of Sir John Newton, commencing October, 1699. 4to.

Vol. XLVII.—Account-book of the Rev. H. Arlington. 4to.

Vol. XLVIII.—Account-book of John French, 1653.

Vol. XLIX.—Wright's account-book, 1676. Thin 4to.

Vol. L.—Mr. Poole's account-book from 1675 to 1679. Fol. This volume contains some curious entries.

Vol. LI.—Private account-book of Sir John Newton, commencing in March, 1719–20. 12mo.

Vol. LII.—Memorandum-book of expenses of Antony Fowle, esq., of Goudhurst, Co. Kent, a justice of the peace, 1671, written in a copy of Lilly's Ephemeris for that year. 12 mo.

Vol. LIII.—A book of the accounts of the Hon. Lady Archer, from 1683 to 1689. Fol.

Vol. LIV.—The Easter-book of Campsall, Co. York, commencing in the year 1576. Small fol. This is of an earlier period than it was proposed to illustrate by this collection, but it is admitted as a specimen of more ancient accounts.

There is scarcely a branch of trade, an article of manufacture, or a produce of agriculture, the history of which is not illustrated by these papers. They are often brief; but a close examination can scarcely fail of discovering minute traces of past times in particulars for which it would be vain to search elsewhere. To say more might exaggerate the importance of the collection; to say less would be to conceal its value, which, to some extent, may be said to consist chiefly in the circumstance that the information it contains could not be yielded by the treasures of any library in the world, with the exception of those in the British Museum.

AVENUE LODGE, BRIXTON HILL, NEAR LONDON, 28th October, 1852.

It would show the proportionate attention to the various departments of learning.

It would show, from year to year, the increase or decrease of interest in particular pursuits.

It would show the comparative literary fertility and wealth of different portions of the country.

It would show the progressive improvements in the subsidiary arts of paper-making, binding, engraving, and so forth.

All these points possess interest to different classes of inquirers. The wants of all literary investigators should be respected, and, as far as possible, supplied. The historian is not less to be provided for than the philosopher, the artist than the statesman. If we had the means, therefore, of forming a complete collection of copyright works, we would reject nothing, not even that which might to ourselves appear utterly trivial and unworthy of preservation; for the article which one would reject, might, in coming times, for some reason which could not possibly have been foreseen, possess more interest than any other in the collection.

It is impossible for any man to judge competently of the wants of future generations. It is unsafe to intrust to any one the power of rejecting works as worthless. Many enlightened contemporaries of Milton and Newton would have rejected, as worthless, the *Paradise Lost* and the *Principia*. Sir Thomas Bodley, the founder of the great library which bears his name—a contemporary of Shakspeare—insisted, contrary to the advice of his librarian, Dr. James, in excluding plays and almanacs, and most pamphlets, which he was accustomed to call “riff-raff” and “baggage-books.” The Bodleian Library is now paying very high prices for those books which then might have been procured almost without cost.

It is stated that one of the libraries in England, to which books were sent by copyright, and which was allowed to select such as were worthy to be retained, rejected, in a single year, *The Antiquary*; *Mrs. Opie’s novels*; one of *Wordsworth’s odes*, and his letter to a friend of *Burns*; *Cobbett’s publications*; *Jameson on Minerals*, (second edition,) and the *Edinburg Medical and Surgical Journal*; *The Siege of Corinth*, and *Shelley’s Alastor*; *Lord Brougham’s Speech on Agricultural Distress*, and *McCulloch’s Essay on the National Debt*; *Comparative Tables of Commercial Weights*; *Beethoven’s Musical Compositions*, and many other similar works. (See “Copy of a Representation from the Trustees of the British Museum to the Treasury,” March 27, 1846, page 35.)

There ought, therefore, to be in every country one complete collection of everything published—one library, where everything printed should be garnered up, and treated as of some importance; for, although in the multitude of libraries everything may be preserved somewhere, yet, from being scattered about, and from there being no one place where the student would be *sure* of finding all that he might seek, many books would be practically lost.

The investigator of the last half century of American history is now obliged to travel the country through to collect books and papers for his work. Suppose that everything published in the country for the

last hundred years had been preserved in one library, had that library been in town or country, in the remote east or farthest south, it would have been the great place of resort for students of American history.

How many would already have gained among its alcoves the means of presenting to the world, in new and fresh pictures, the eventful history of our country. How many disputed and doubtful points would have been settled. How many errors would have been avoided. How much injustice to private character would have been silenced. How many bright examples of patriotism and devotion, now lost, would have been held up to the emulation of youth and the admiration of all.

Although these remarks go to show the importance of a complete collection somewhere, they do not show that the same rule of accepting or rejecting should be followed where it is known that the collection can never be made complete.

Every partial collection is supposed to be a selection made for some specific purpose; and although many works, apparently very remote in their character from those chosen, may be desirable, yet, when means of procuring and preserving are limited, it may be best, it may be necessary, to confine the selection to such as are most intimately connected with the main purpose of the library.

It might further be a question whether, admitting the importance of a complete collection of copyright books, it should be made here.

I endeavored to show, in my last report, that it would not be practicable to collect these books in any other way than by a condition of the copyright law, enforcing the deposit somewhere.

It seems appropriate, if not necessary, that the place of deposit designated by government should be at Washington. Experience has shown that the selection of the Department of State for this purpose is inconvenient. The President of the United States, in his last message to Congress, has expressed the opinion that it would be a benefit to the public service to transfer the execution of the copyright law from the State Department. The other places of deposit would be the library of Congress, and the Smithsonian Institution. Whether the deposit be made here, or in the library of Congress, it certainly is the duty of the government to defray all expenses connected with it. It pertains to the government, is a necessary condition of the protection which the government promises to authors, and is precisely analogous to the case of the deposit of models in the Patent Office. This Institution cannot afford, at its own cost, to receive and take care of everything that is deposited. At the same time it is bound, by its position, to urge the necessity of the deposit, to show how it should be regulated, and to do all that it can, without prejudice to its other interests, to secure to authors and to publishers, as well as to students and literary men, the full advantages which the law contemplates. I accordingly proposed last year a plan which seemed to me to meet all the necessities of the case.

The general features of this plan were:

1. To dispense with the registration of title, rendering the publication of the claim of copyright the only preliminary to the vesting of the right, previous to the depositing of a copy.

2. To reduce the number of copies required for deposit from three to one.

3. To require the deposit of one copy, at the risk and expense of the proprietor of the copyright, within a reasonable time after publication.

4. To require a small fee from the proprietor, sufficient to defray the expense of furnishing certificates, keeping records, and preserving the books. This fee might be made considerably less than that now required of publishers, and still meet all these purposes.

Thus the trouble and expense to publishers would be greatly diminished, without devolving any burden either upon government, or the Institution receiving the deposits.

The deposit in the library of this Institution might be made of great incidental benefit to publishers and authors.

It has been proposed to issue a monthly bulletin, to contain the list of all books deposited during the preceding month. This work might, under the operation of such a law as proposed, be commenced immediately. It would be widely circulated in this country, and among reading and studious men in all parts of the world. Publishers would generally be willing to pay a large price for such a medium of advertising. But, in the case supposed, the advertisement would be incidental to the deposit, and would cost them nothing. By our system of stereotyping the titles separately, they would not only fill their place in the bulletin, but would serve for the catalogue of our own library, and of every other possessing the books and receiving from us its printed catalogue.

Various attempts have been made to make complete lists of American publications; but although some have been quite full, none have ever been complete. The best is that of Mr. Norton, in the *Literary Gazette*.

It would be matter of surprise to many, and of patriotic pride to all, to know the interest with which this list is received in Europe. But a few years have elapsed since an English review arrogantly asked, "In the four quarters of the world, who reads an American book?" It would not now be more arrogant in us to demand, What citizen of the great republic of letters does not read American books?

On the presentation of my last report, I hoped that it would be printed and distributed early in the year among publishers and authors, that we might be able ere this time to ascertain fully their views on the subject. They are more immediately interested in the matter, and nothing should be done which would be unsatisfactory to them.

There is in this connexion another idea, which long ago occurred to me, but which I have not ventured to suggest openly, lest it should seem extravagant, and because I could see no immediate means for accomplishing the object; I mean an international copyright exchange.

If, for example, a duplicate collection of all works for which copyrights are secured in this country could be made, it might be offered to England in exchange for a like collection of its own publications; and this exchange, if prosperous between two countries, might be extended to all the principal nations of the book-making world. I do not propose any plan for effecting this end, nor do I know that it could ever be realized; but in view of what has been done by this Institution during the last year in the way of literary exchanges, such an idea is not

altogether chimerical. The advantages which would result from such an interchange would be immense. The literary and scientific labors of each country would be known in their full extent, and almost simultaneously in all other countries. Would not science advance more rapidly? Would not better justice be done to American genius?

Nothing, it seems to me, could more effectually conduce to the rapid progress of science and humanity, than a system which should make the literary and scientific labors in each country known immediately in all others.

The books gathered would, it is true, be in but one library; but books in a large public library, though chained to the shelves, are not to be shut out from the world. They contain ideas, which entering the minds of those who have access to them, there fructify, and the fruit is scattered far and wide. Books, it is true, are silent and motionless: they seem to produce no results. But within them is the spring of all progress, the spirit which stimulates and sustains all the activity that the world of letters, of science, of politics, and of religion, manifests.

The number of books *purchased* during the last year is very small. The money was especially desired for the successful completion of enterprises undertaken by the department of active operations. Besides this, the rooms temporarily occupied as a place of deposit for books were, even at the beginning of the year, filled nearly to the capacity of the shelves erected, and it was thought best not to incur further expense for arrangements which could not be of permanent utility.

The selection of books for purchase has been uniformly of such as were immediately needed, not of such as might be more remotely useful. It would have been preposterous to attempt with our means the immediate formation of a universal library; though we have not ceased to cherish the hope and belief that a great library of reference and research will ultimately be gathered here.

Our expectations for the library are not limited by our immediate means of purchasing books. The history of other libraries in this country shows that any permanent and well located institution of the kind may reasonably expect accessions by donation and bequest, in proportion to the importance of its position. The more conspicuous, central, and permanent the establishment, the more likely it is to attract the liberal notice of those who have valuable collections to bestow.

The location of the Smithsonian Institution at Washington, its permanent endowment, its independence of partisan and sectarian influences, the high position in the scientific world which it has already achieved by its active operations, the results of the system of exchanges of which we are now enjoying but the first fruits, together with the various means which have been adopted or suggested for aiding other libraries and advancing bibliographical objects, conspire to give prominence to the library of this Institution; and they will, before many years, render it, if not the largest and most important in the country, at least a very valuable auxiliary to our national literary progress. We expect, however, that it will increase mostly by exchanges and gifts. We may justly hope that many valuable private collections of books in particular departments of learning will be placed here, to

remain as the best monument that can be reared to commemorate the learning and taste as well as the liberality of their collectors.

It is not the love of acquisition or pride of possession which leads us to desire such gifts. It certainly is not the wish to withdraw them from other institutions. It is the belief that a large library of reference is likely to be formed here, and to be more generally useful here than if placed in any other city. There is no city in the Union more attractive to men of science and letters than Washington. This is principally owing to the fact that so many of the most intellectual men of the nation are gathered here, occupying its high places of trust and honor, and that here are discussed, by statesmen and orators, questions of deepest interest to liberty and civilization. The attractiveness of Washington is enhanced by its genial climate, which will undoubtedly render it more and more a favorite resort. This Institution, from its location, its connexion with the government, and its own organization and operations, possesses opportunities for collecting certain classes of books, which are of great importance in a library of reference, superior to those of any other library except that of Congress. I refer to memoirs and transactions of learned societies, publications of educational establishments, documents of the general and State governments, and of foreign governments, besides many pamphlets and books, principally of local character, published in all parts of the land.

We do not suppose that here, or anywhere, for many years to come, will be formed that complete treasury of the materials for literary pursuits which is the *beau-ideal* of the bibliographer; but we may, nevertheless, do all that we can (without prejudice to other interests) in the direction of this desirable end.

It is proper to remark, in this connexion, that the chief expense of a library is not in the permanent custody of it when once rightly ordered. It is in the care of accessions, and the establishment of them as parts of the collection. Every book which comes into a library must be subjected to the following processes: It must be collated, to see that it is perfect; stamped, so that it can be identified; recorded in the book which constitutes the inventory of property; located upon the shelf, and have its location marked upon it; entered in the local catalogue, which shows the books upon each shelf, and enables the librarian to discover the title of any one that may have occupied a spot now vacant. It must also be catalogued and indexed: perhaps its receipt must be acknowledged to the donor; and it may require to be marked for binding. It is this work upon all accessions, which is repeated for every pamphlet and every article—the work of organizing a library, together with that of selecting books and directing purchases—which constitutes the appropriate work of the librarian.

This work once well done, the library, if it is to remain stationary, may pass from the hands of the librarian or collector and organizer, to those of the mere custodian or guard, who protects the books from depredation and injury, and answers the calls of those who consult them. These are inexpensive labors. One man of common intelligence in a library thus perfectly organized, and receiving no accessions, would be sufficient to take charge of a hundred thousand volumes or more, and serve a large number of readers.

I dwell upon this point, because I think it is not generally understood that the chief expense of a library is in its organization, rather than in its permanent custody. The two things should always be kept distinct. A system for rightly ordering a library should be early formed and steadily adhered to. Sufficient aid of the right kind should be furnished to the librarian, to enable him to incorporate accessions at once among the other portions of the collection; to catalogue them, and render them in the highest degree useful. A collection of books is not all that constitutes a library, any more than a collection of men is of necessity an army. The men must be organized for war-like operations to compose an army; so books, to form a library, must be arranged for purposes of study and reference.

The necessity of the proper management of a library is, however, better appreciated than the labor which it requires.

In nearly all the large libraries of Europe (that of the University of Gottingen is perhaps the only exception) the librarians have not been furnished with the necessary aid to properly dispose of accessions as they were received. The consequence is, that the work of organizing has remained unaccomplished, and that the librarians have been turned into mere custodians, from the impossibility of committing to servants what would otherwise be their work. The books were not so placed that they could be found and kept by mere servitors. The memory and learning of the librarian is in incessant demand from the want of printed guides, which ought to have been provided. Thus arrears have gone on accumulating, and the expenses of the collections have constantly increased.

The view which we take of the necessity of large collections of books leads us to express the gratification which we feel at the large appropriations made this year by Congress for replenishing the desolated shelves of its library. Should this liberality be continued, it will be providing with great rapidity for many of the wants which it has been our purpose to signalize. We doubt whether any appropriation made by Congress has been hailed with more intelligent pleasure. It revived the hopes of the studious throughout the country, and led to the belief that the hands which had begun this good work would carry it on to perfection. With an overflowing treasury, the possession of an enlightened and appreciative nation, we may well hope that money will not be wanting to establish the independence of American learning, to render it no longer provincial, no longer relying for its support upon the libraries of Europe.

Another movement in the same direction, suddenly assuming a position of commanding importance, is the establishment of the Astor Library of New York. It was endowed by a business man, who had the sagacity to place it under the management of one who had made the selection, purchase, and care of libraries a professional study for many years. In the history of similar collections there is nothing to compare or compete with the gathering of the Astor Library in New York.

It was established in 1849. The appropriations for the purchase of books have been placed entirely at the disposal of Dr. Joseph G. Cogswell, the librarian. He has collected, during two visits to Europe,

nearly 60,000 volumes, with about \$63,000 dollars. But this is not all: these volumes were not taken at random; they were bought from a list previously prepared, without regard to cost. The collection may, for practical utility and adaptation to its purposes, for just distribution among all the departments of learning, for choice of editions, and material perfection of copy and binding, challenge comparison with any of its size in the world.

During the year, I have prepared a work containing an exposition of the system for constructing catalogues of libraries, and a general catalogue, by means of separate stereotype titles, with rules for the guidance of librarians, and examples illustrating the rules. This work, although not large, cost me considerable time and labor.

It was stereotyped in our own office, by the new process, which we have done so much to perfect and adapt to our own peculiar purposes. The typographical appearance of the book is very satisfactory, although the work was executed by unskilful hands, and under many unfavorable circumstances. In our operations of stereotyping we have experienced many delays and difficulties, from the fact that there was no stereotype office or type foundry at hand, and no persons accustomed to the processes of stereotyping, or the manufacture of the delicate apparatus required. We have lately, however, secured the services of an accomplished mechanic, who has already made great improvements in our processes and apparatus, and has acquired much skill in the new art.

A series of bibliographical works has been projected and commenced by the Institution, intended gradually to form a library of valuable aids to research in particular departments of knowledge. The facilities afforded for the prosecution of this plan by the stereotyping of the titles separately, so that each part may first be printed by itself, and afterwards, without loss of the previous labor and cost of printing, be continued to form the complete work, would alone justify the labor and expense of establishing an office for stereotyping. The work already executed, or in progress, will furnish a ready test of the practicability and efficiency of the mode of stereotyping which we have employed.

Other works of a similar character are now in preparation; among them the bibliography of education, which we hope may be finished during the year 1853. The record of periodical publications is now nearly finished. The catalogue of bibliographical works in the library will shortly be put to press. These works may be prepared and printed without interfering with the progress of other work upon the catalogue of our own or of other libraries.

Our stereotype office is now in operation, and we can execute work with a good degree of rapidity. The plan is now offered to the public. It has already been fully stated that the expense of publishing the first large catalogue will be greater than of those that follow, although this expense will subsequently be repaid to the first library in the diminution of the expense of reprinting its catalogue. The commission upon the catalogue system recommended to the Board of Regents to take measures to procure the printing of the catalogue of the library of Congress. The reasons for this recommendation were, that this library would

sooner reap the benefits of the plan than any other, and that the first outlay could be better borne. Another reason is, that it is desirable to have the first catalogue prepared near to the Institution, where the whole work can be more conveniently supervised and rendered accurate. It is much to be hoped, for the success of the plan, that this recommendation may be soon followed. The Institution has borne alone the expense of developing the system, and it can reap no greater benefits than any other library of equal size. The expense of furnishing the first stock of titles to be used for all other libraries can ill be borne. If the work be stopped when our own means of continuing it are exhausted, much that has been done will be lost. It will be impossible to resume operations after an interval of cessation, without great loss. It should be remarked that it is not necessary to finish the preparation of a catalogue before beginning to print it. The stereotyping may commence with the cataloguing, and the catalogue may begin with any part of the library. The catalogue may thus be published in parts, each containing the books on a particular subject. These parts may afterwards be combined to form the complete catalogue, which may be either alphabetical or classed.

I close by most earnestly asking for this matter the immediate consideration of the Board of Regents, confident that but a small sum of money, compared with the great result to be gained, is now needed to secure the general adoption of this system, and the full realization of all the benefits which it is calculated to bestow upon the cause of knowledge.

Respectfully submitted :

C. C. JEWETT.

REPORT OF THE ASSISTANT SECRETARY, IN CHARGE OF THE MUSEUM, &c.

TO JOSEPH HENRY, LL. D.,

Secretary of the Smithsonian Institution :

SIR : In obedience to your requirement, I have the honor herewith to present a report upon the following branches of operations given into my charge.

I.—PUBLICATIONS.

In no previous year have the publications of the Institution been so numerous and varied as in the one just passed. In addition to two quarto volumes of Smithsonian Contributions to Knowledge, a considerable number of octavo works and miscellaneous matter have been issued.

The following list contains an enumeration of the separate articles in volume III, Smithsonian Contributions to Knowledge, the whole making a volume of 564 quarto pages, and 35 plates. With the exception of Nos. 3, 8, and 9, all were issued during 1852.

List of Memoirs in volume III, Smithsonian Contributions.

1. Observations on Terrestrial Magnetism. By John Locke, M. D., M. A. P. S. ; pp. 30.
2. Researches on Electrical Rheometry. By A. Secchi ; pp. 60, and three plates.
3. Contributions to the Natural History of the Fresh Water Fishes of North America. By Charles Girard—I. A Monograph of the Cottoids ; pp. 80, and three plates.
4. Nereis Boreali-Americana, or Contributions to a History of the Marine Algæ of North America. By William Henry Harvey, M. D., M. R. I. A. ; Part I, Melanospermeæ ; pp. 152, and twelve plates.
5. Plantæ Wrightianæ Texano-Neo-Mexicanæ. By Dr. Asa Gray, M. D. ; Part I ; pp. 146, and ten plates.
6. The Law of Deposit of the Flood Tide ; its Dynamical Action and Office. By Charles Henry Davis, Lieut. U. S. Navy ; pp. 14.
7. Description of Ancient Works in Ohio. By Charles Whittlesey ; pp. 20, and seven plates.
8. Occultations visible in the United States during the year 1852. Computed by John Downes, esq. ; pp. 34.
9. Ephemeris of Neptune for the year 1852. By Sears C. Walker, esq. ; pp. 10.

The fourth volume, also issued and distributed in 1852, consists of a single work, viz: Grammar and Dictionary of the Dakota Language. Edited by the Rev. S. R. Riggs; pp. 416.

Several Memoirs, intended for the 5th and 6th volumes, are in press, as follows:

Memoir on the Fossil American Ox. By Dr. Joseph Leidy.

Plantæ Wrightianæ, Part II. By Dr. Asa Gray.

North American Algæ, Part II. By Dr. Harvey.

Plantæ Fremontianæ. By Dr. John Torrey.

In addition to these, the following are ready to go to press:

Nervous Anatomy of *Rana Pipiens*. By Dr. J. Wyman.

Winds of the Northern Hemisphere. By Prof. J. H. Coffin.

A Fauna and Flora of Animals. By Dr. J. Leidy.

Fossil Vertebrata of Nebraska. By Dr. Leidy.

Nearly all the illustrations of these have been completed, and are ready for binding with the text, whenever ready.

Of octavo works, the following have appeared:

1. The Sixth Annual Report of the Board of Regents of the Smithsonian Institution; pp. 100.

2. Directions for Making Collections in Natural History; pp. 24.

3. On the Construction of Catalogues of Libraries and of a General Catalogue. By Prof. C. C. Jewett; pp. 78.

4. Meteorological and other Tables. By Prof. A. Guyot; pp. 176.

5. Catalogue of Paintings in the Stanley Gallery; pp. 76.

Making a total of 980 pages quarto and 514 octavo.

There are now in press—

1. Catalogue of Serpents in the Museum of the Smithsonian Institution.

2. Bibliography of American Natural History for 1852.

A second edition of the Report on Recent Improvements in the Chemical Arts, has been called for by the public and distributed.

In addition to the above, a large number of circulars, calling for or communicating information on a great variety of subjects, has been issued.

II.—DISTRIBUTION OF PUBLICATIONS AND EXCHANGES.

(a.)—FOREIGN DISTRIBUTION.

The experience of the year 1852 has given gratifying evidence of the efficiency of the system of foreign exchanges now followed by the Smithsonian Institution. The receipts for the year will be found to have increased nearly eight-fold over those of 1851. The undertaking on the part of the Smithsonian Institution to receive parcels from the various societies in the United States, and distribute them to its agents in Europe, and to receive their foreign exchanges in return, has been found productive of the happiest results. The scientific relations between the two worlds have been very much strengthened in this way, and a correspondence established of the greatest importance to all parties. It may safely be estimated that at least three-fourths of the

scientific exchanges of this country and of Europe now pass through the Smithsonian Institution. The expense, which is borne by the Institution, though considerable, is trifling in proportion to the good accomplished in the diffusion of knowledge. The more minute statistics of this branch of exchanges will be given in the tables below.

In addition to the publications of societies, numerous copies of several valuable works have been given by individuals to the Institution for distribution. In many cases it has been left to the Institution to select the foreign recipients of presents both from societies and individuals.

The amount of matter to be sent to Europe was very large. The publications of the Institution, consisting of two quarto volumes and a number of octavos, were double, in number, those of the last year. The Senate ordered three hundred copies of Foster and Whitney's report on Lake Superior, one hundred of Captain Stansbury's report of the Exploration of Utah, and one hundred of Dr. Owen's report of the geology of Iowa, Wisconsin, and Minnesota. The kindness of Mr. R. P. Anderson, superintendent of the document-room, and of Mr. Dooley, superintendent of the folding-room of the Senate, put the Institution in possession of a large number of public documents of scientific interest. The Indian Bureau sent one hundred and seventy-eight volumes of the History of the Indian Tribes; and the institutions of the country generally forwarded large numbers of their Transactions. The labor of arranging the details of the transmission was of course very great, the titles being first entered in the order of reception, then posted up in a ledger, in which a debit and credit account is kept with each correspondent, and a minute invoice of the entries made out and a copy sent by mail. Precisely the same system is adopted in regard to the parcels received from Europe, being first entered in a day-book, then posted up in a ledger, and finally transcribed a third time in the letter of acknowledgment. Parcels for other institutions are likewise entered in a special book, and a memorandum kept of the date and mode of transmission.

In the present case the number of letters with invoices, prepared and sent, amounted nearly to six hundred, many of them containing upwards of fifty titles.

The making up of the parcels occupied about a week, and the entire foreign transmission left the Smithsonian Institution by the 21st of June. The cases, as before, were sent to Dr. J. G. Flügel, of Leipzig, to H. Bossange, Paris, and to Henry Stevens, of London, all of whom evinced the greatest energy and promptness in their distribution. This distribution has been nearly completed, so that every foreign mail brings warm acknowledgments of the liberality of the Institution. Notices of this transmission have appeared in many of the foreign journals, and much admiration expressed of the extent and completeness with which the institution is fulfilling its great mission.

The following table presents the statistics of the sending of June, 1852. The names of the institutions themselves will be found in the list given in the appendix. To some of these the full series of publications are not sent, but only works on special subjects. The total number, as will be seen, is 300, of which 207 receive the Smithsonian Contributions in full.

A.—TABLE EXHIBITING THE AMOUNT OF PRINTED MATTER SENT
ABROAD IN 1852 BY THE SMITHSONIAN INSTITUTION.

1. *Distributed by Dr. J. G. Flügel, Leipsic.*

Countries.	Institutions.	Individuals.	Total of addresses.	Packages to institutions.	Packages to individuals.	Total of packages.
Sweden	6	.....	.....	14	.....	.....
Norway	4	.....	.....	7	.....	.....
Iceland	1	.....	.....	1	.....	.....
Denmark.....	4	.....	.....	8	.....	.....
Russia	11	.....	.....	16	.....	.....
Holland	11	.....	.....	19	.....	.....
Germany.....	67	.....	.....	133	.....	.....
Belgium.....	8	.....	.....	15	.....	.....
Switzerland.....	10	.....	.....	19	.....	.....
Batavia	1	.....	.....	2	.....	.....
Total	123	24	147	234	37	271

2. *Distributed by Hector Bossange, Paris.*

Countries.	Institutions.	Individuals.	Total of addresses.	Packages to institutions.	Packages to individuals.	Total of packages.
France.....	54	.....	.....	70	.....	.....
Italy	25	.....	.....	29	.....	.....
Total	79	10	89	99	10	109

3. *Distributed through the Royal Society and the agency of Henry Stevens, London.*

Countries.	Institutions.	Individuals.	Total of addresses.	Packages to institutions.	Packages to individuals.	Total of packages.
Portugal.....	1	.....	.....	2	.....	.....
Spain	4	.....	.....	5	.....	.....
Great Britain.....	60	.....	.....	113	.....	.....
Total	65	28	93	120	34	154

4. *Miscellaneous Distribution.*

Countries.	Institutions.	Individuals.	Total of addresses.	Packages to institutions.	Packages to individuals.	Total of packages.
Greece, Turkey, Asia, and Africa.....	17	.....	.....	19	.....	.....
Mexico and South America..	16	.....	.....	19	.....	.....
Total.....	33	.....	33	38	.....	38

5. *General Summary.*

Agents.	Total of addresses.	Total of packages.	Letters accompanying packages.	Number of boxes.	Capacity in cubic feet.	Weight in pounds.
Dr. J. G. Flügel.....	147	271	214	25	125	4,250
H. Bossange.....	89	109	112	9	45	1,530
H. Stevens.....	93	154	97	8	73	2,445
Miscellaneous	33	38	33	4	20	660
Total.....	362	572	456	46	263	9,885

6. *Total of Volumes sent.*

Presents from the Smithsonian Institution.....	5,756
Presents from others.....	3,439
Total	9,195

Many of the above-mentioned parcels contained packages for institutions or individuals not in direct correspondence with the Smithsonian Institution. As a letter of advice was sent to each of these, the difference between the number of addresses in the above tables, and the number of letters sent, expresses the number of such packages, viz :

Number of letters sent..... 456
 Number of Smithsonian addresses..... 362

Difference expressing the included parcels..... 94
 Which added to..... 572

Gives as the total of packages made up, and sent to 456 addresses, 666

B.—TABLE EXHIBITING THE AMOUNT OF MATTER RECEIVED FROM THE DIFFERENT INSTITUTIONS IN THE UNITED STATES IN 1852 FOR DISTRIBUTION ABROAD.

Obtained by the Smithsonian Institution from various sources, but exclusive of its own publications 3,958 vols.

Received from other sources, as follows:

Boston Society of Natural History.....	34	
Dr. John C. Warren.....	100	
American Oriental Society.....	33	
Academy of Natural Sciences.....	492	
American Philosophical Society.....	63	
National Observatory.....	1,108	
Superintendent of Indian Affairs.....	178	
Coast Survey.....	222	
Topographical Bureau.....	21	
Commissioner of Patents.....	627	
Postmaster General.....	32	
Census Office.....	100	
Light-House Board.....	68	
Surgeon General.....	149	
Georgetown College.....	60	
American Journal of Science.....	50	
Ohio Board of Agriculture.....	51	
Presbyterian Board of Education.....	50	
Miscellaneous, including individuals.....	745	
		— 4,188 vols.
Total received.....	8,146	“

The actual number of volumes and titles is considerably greater than the above, as of the 4,188 quoted as from other sources, 351 consisted of packages, each containing several volumes. This would make the sum total amount nearly to 9,000 volumes.

Such volumes as were received subsequent to the 21st of June are still on hand, amounting to about 1,650. These would have been sent off early in the past autumn but for the desire to include with them the sixth Report of the Smithsonian Institution, the Report of the Superintendent of the Coast Survey, and of the Commissioner of Patents for 1851, the final Report on the Geology of Iowa, Minnesota, and Wisconsin, and some others. It is confidently expected that all will be despatched early in January, to prepare the way for the large transmission in June.

In table C will be found an exhibit of the receipts of the Smithsonian Institution from abroad in 1852. For convenience of comparison, I have added the returns for 1851, and prior dates.

C.—TABLE EXHIBITING THE RECEIPTS BY EXCHANGE IN 1852, AND INCLUDING THOSE OF PREVIOUS YEARS.

Years.	Volumes.			Parts of vols. and pamphlets.			Maps and engrav's.	Total.
	Folio and quarto.	Octavo.	Total.	Folio and quarto.	Octavo.	Total.		
1852.....	449	689	1,138	495	1,414	1,909	1,698	4,745
1851.....	96	171	267	118	224	342	-----	609
1850 and prior..	132	138	270	-----	-----	608	-----	878
Total.....	677	998	1,675	613	1,638	2,859	1,698	6,232

It will be seen from the above table that the total receipts for 1852 have been three times as great as during all previous years. The number of extended series of Transactions, and other desirable works, has been in unusual proportion. Among these I can only mention a few: as 30 volumes, 8vo., of Transactions and Reports from the Academy of Sciences, Stockholm; 21 volumes, 4to., of Transactions of the Danish Society of Sciences, Copenhagen; 23 volumes, 8vo., of Memoirs of the Academie Nationale of Metz; 26 volumes, 8vo., of the Transactions of the Society of Agriculture, &c., of Lyons; 17 volumes 8vo., and 1 folio, of Gay's History of Chili, from the Chilian government; 25 volumes, 4to., of Philological works, published by the East India Company; 29 volumes, 4to., of Transactions of the Batavian Society of Experimental Philosophy; 20 volumes, 4to., of Transactions of the Royal Society of Edinburg; 1,574 charts from the London Admiralty; 22 quarto and 25 octavo volumes of Transactions of the Utrecht Society of Arts and Sciences; 31 volumes 8vo., and many folio, belonging to the Voyages of the *Astrolabe et Zélée*, *Venus*, *Thetis* et *Esperance*, &c., presented by the Ministère de la Marine of France; 16 volumes, 4to., from the Royal College of Surgeons, of London; 54 volumes, 4to., of Manuscripts from J. O. Halliwell, of London; 14 volumes, 4to., from the Academy of Sciences, Bologna; with very many others. Almost every parcel from a foreign society contains donations from prominent members, of works, many of them often very costly. In fact, the books received in 1852 could scarcely have been purchased for less than four or five thousand dollars.

The following table exhibits the number of parcels, many of them including several volumes, which have been received in 1852 for other institutions in the United States.

D.—TABLE OF PACKAGES RECEIVED IN 1852 FOR OTHER INSTITUTIONS.

<i>Boston</i> .—American Academy of Arts and Sciences.....	24
Natural History Society.....	10

<i>Cambridge.</i> —Observatory.....	14
Astronomical Journal.....	29
<i>New Haven.</i> —Journal of Science.....	20
American Oriental Society.....	5
<i>New York.</i> —New York Lyceum of Natural History.....	10
Ethnological Society.....	11
<i>Albany.</i> —New York State Library.....	4
<i>Philadelphia.</i> —American Philosophical Society.....	39
Academy of Natural Sciences.....	13
Franklin Institute.....	7
<i>Washington.</i> —National Observatory.....	41
Coast Survey.....	32
National Institute.....	19
Congress Library.....	6
State Department.....	4
Astronomical Expedition to Chili.....	14
<i>Georgetown.</i> —College.....	7
<i>Cincinnati.</i> —Observatory.....	10
Miscellaneous institutions.....	123
Individuals.....	195
Total of packages.....	<u>637</u>

It is much to be hoped that Congress may make some systematic and permanent arrangement for distributing a complete series of its works to European libraries, to at least thirty of which they might be judiciously supplied. It would also be desirable that of particular works of scientific interest, as reports of Patents, Coast Survey, explorations in geography and geology, and others of a similar character, a larger number might be assigned, of from one hundred to three hundred, as has already been done in some instances by the Senate. These might be distributed by the Smithsonian Institution at moderate cost to government, and direct returns or exchanges obtained for the library of Congress if desired.

The distribution of Congressional documents in the United States also might be considerably modified. At present the copies given to the State Department for domestic distribution can only be sent to colleges or lyceums, not to regular public libraries, even of the largest class. The rules in force with the Smithsonian Institution might well be applied in the present case, of making as equable a distribution as possible throughout the country, supplying all large public libraries, and giving to smaller ones where a large district would otherwise be destitute. It is also a matter of complaint with men having special objects of research that public documents relating to their investigations are not assigned to them. This might be remedied by directing some department to keep full lists of persons in the various walks of science, and to supply the names on such lists regularly with extra copies of documents to be furnished by Congress. How far it would be convenient or proper for the Smithsonian Institution to undertake this labor, and under what conditions, is for you to say.

(b.)—DOMESTIC DISTRIBUTION AND EXCHANGES.

Owing to various unforeseen and vexatious delays, the copies of the Smithsonian volumes for domestic distribution could not be sent off before October. They have, however, all been distributed, and acknowledgments for nearly the entire number received. The Institution is much indebted to the following gentlemen for receiving the boxes containing the parcels and forwarding them, without any charge, to their respective destinations: Messrs. J. P. Jewett & Co., booksellers, Boston; George P. Putnam & Co., booksellers, New York; Messrs. Lippincott, Grambo, & Co., booksellers, Philadelphia; John Russell, bookseller, Charleston; B. M. Norman, bookseller, New Orleans; Dr. Geo. Engelmann, St. Louis, assisted by John Halsall, bookseller, St. Louis; H. W. Derby & Co., booksellers, Cincinnati; and Jewett, Proctor, & Worthington, Cleveland. As in the transmission of last year, most of the parcels sent included copies of the second volume of the great work on the Indian tribes, presented by Mr. Luke Lea, Commissioner of Indian Affairs, to recipients mostly nominated by the Smithsonian Institution. A number of copies of the valuable quarto volume on the North American mastodon, by Dr. John C. Warren, was sent by the author to the Smithsonian Institution, for such distribution as it might consider suitable.

III.—NATURAL HISTORY DÉPÂRTMENT.

(a.)—COLLECTIONS.

During the year 1852, the collections of specimens illustrating the natural history of North America, and received by the Institution, have been very numerous, embracing a large number of species, either quite rare or absolutely new to science. A list of these additions will be found in the Appendix—the number of distinct donations exceeding 100. These embrace a very large number of specimens, as many of the collections indicated consist of several filled kegs, barrels, or boxes. To enumerate the individual components of each would occupy too much space in this report, although such a list is always made out as soon as possible after reception, and entered in books kept for the purpose. A copy is also sent to the donor, if desired. The specimens are assorted as fast as possible, and arranged as well as can be done in the temporary want of room or rooms for their proper preservation.

A gratifying feature in relation to the additions to the museum in the past year, consists in the number and value of those derived from officers of the army and navy. Such persons must always be the chief contributors of new matter, and it is a subject of much congratulation to find that they are becoming more and more alive to the importance of depositing their collections in a place where they can be readily visited, and, by combination with others procured under similar circumstances, serve to facilitate the preparation of the reports of expeditions, which are usually, to a considerable extent, made out in this city. I need only refer to the valuable collections of Lieut. Col. Graham, Major Emory, Captains Marcy and McClellan, Lieutenant Wright, Dr. Edwards, Dr. Jarvis, Lieutenant Gilliss, and others.

The collections of specimens officially deposited with the Institution

during the year 1852, for safe-keeping and the preparation of reports, have been quite numerous. The zoological and palæontological series gathered by Mr. John H. Clark, under Lieutenant Colonel Graham, while on duty with the United States and Mexican boundary survey, far exceed any before made, under similar circumstances, in North America, considered in reference either to their extent or perfection of preservation. Major Emory has also sent in valuable specimens from the boundary, likewise collected by Mr. Clark. The Commissioner of the General Land Office deposited the extensive series of minerals and fossils collected by Dr. D. D. Owen, while engaged in the geological survey of Iowa, Wisconsin, and Minnesota. The very extensive and valuable collections made during a three years' residence in Chili by Licut. J. M. Gilliss, U. S. Navy, have also been deposited by him, under authority from the Secretary of the Navy. They consist of numerous and well preserved skins of birds and mammals, reptiles, fishes, and invertebrates, in alcohol or dried, and plants, fossils, and minerals.

Many valuable collections have been received from meteorological and other regular correspondents of the Institution. These, scattered over the entire North American continent, constitute a corps always active in accumulating facts and materials of the highest importance in the promotion of science.

Some interesting specimens have been received by the Smithsonian Institution, under an engagement made with several societies and surveys to name collections which may be sent for that purpose. Such specimens, if necessary, are sent to naturalists residing out of the city, who make their examinations and report the results to the Institution.

The American Fur Company, ever ready to recognise the claims of science, has authorized the Institution to supply their posts on the upper Missouri with the materials for preserving specimens of natural history. For this purpose, through the kind agency of Dr. George Engelmann, of St. Louis, a quantity of alcohol and of arsenic was distributed at various points along that remote region, which will, no doubt, in time yield good fruit. The report for 1850 shows how much has already been done by gentlemen connected with the company, and it is hoped that the results for 1853 will in no degree fall behind what is there recorded.

I shall now proceed to give a brief systematic account of the specimens received, referring to the alphabetical list of donors for fuller information on the subject.

Mammals.—The collection of mammals from Northern Europe, announced last year as having been transmitted by the Academy of Sciences, Stockholm, has since arrived, and fully realized the anticipations of its value. It consists of well-preserved skins and skeletons of nearly all the larger species, as reindeer, elk, stag, bears, wolves, foxes, glutton, &c. All of them are indispensable to the proper determination of the allied American species—a task which could never before be accomplished for want of just such material. At the present time the Smithsonian Institution is in possession of the best collection of the larger North American and European mammalia, both skins and skeletons, to be found in the United States.

A skin of *Bassar's astuta*, brought by Captain Marcy from Red river,

supplies the most northern locality yet known of this species. Some valuable mammals, from Western America, have been presented by the Academy of Natural Sciences. Skulls and horns of the common deer have been received from Mr. Stanley, Mr. Guest, and others. Mr. Stanley has also presented skins of the jaguar, *Felis pardalis*, and the peccary, *Dicotyles torquatus*, from Texas. Mr. Charles Wright, so well known for his botanical researches, has given a skin of the *Lynx texensis*, or Texas wild-cat. From Lieut. M. F. Maury has been received a skin of a young manatee, brought from the Amazon river by Lieut. Herndon.

Among skeletons of American mammals, the principal donation is that of the gray wolf of the Yellowstone river, presented by Mr. Edward T. Denig, to whom the Institution has been before indebted for similar favors. Dr. Edwards presented skulls of buffalo, bighorn, &c., with those of Indians of several tribes.

Birds.—Several interesting collections of birds have been received from various sources. Mr. James Fairie has presented some rare species from Louisiana; Mr. Chas. Wright, a series from the vicinity of Frontera, including several species recently described from the valley of the Rio Grande; and Dr. P. R. Hoy, some from the vicinity of Racine, Wisconsin, one of the most interesting ornithological districts in North America. Mr. Wallington has sent an interesting collection of the eggs of birds inhabiting the Tortugas.

Reptiles.—As usual, the most marked additions to the collections of the Institution are to be found in the department of reptiles and fishes. These have been received from all portions of the United States, including California, New Mexico, and Texas. Mr. J. S. Bowman, during a recent journey to California across the plains, collected specimens of *Phrynosoma platyrhinos*, and forwarded them living, with some others of much interest. Dr. Boyle has deposited a valuable collection from Eldorado county, California. A small number of specimens procured by Dr. Gambel, in the same country, has also come into possession of the Institution. Mr. Lindheimer sends numerous specimens from Western Texas; Captains Marcy and McClellan, from Red river; Mr. James Fairie, in Western Louisiana; Colonel B. L. C. Wailes and Dr. Shumard, in Mississippi; Dr. P. R. Hoy, of Racine, Wisconsin; and Rev. Charles Fox, of Wayne county, Michigan, have also greatly enriched the collection with western species. Species from Western Pennsylvania have been received from Professor Williams; and from South Carolina, from Dr. Barker, of Charleston, and Dr. Barratt, of Abbeville.

Fishes.—The collections in this department grow with great rapidity. Mr. Girard brought many specimens from Maine last autumn. A few weeks spent in Massachusetts and New Hampshire gave to myself the opportunity of completing the collections of fresh-water fishes of these States. Very full collections of the fishes of Lake Erie have been received from Rev. Charles Fox; of Lake Michigan, from Dr. Hoy; of the Wabash river, from Dr. Norwood; of the coast of Carolina, from Dr. Barker; of the Tortugas, from Lieut. Wright; of Cayuga lake, from Mr. Hopkins; as well as interesting series from Col. Wailes, of Mississippi; Prof. Porter, of Mercersburg, Pennsylvania; Mr. White,

of Georgia; Dr. Bibb, of Russellville, Kentucky; Dr. Barratt, of Abbeville, South Carolina; Dr. Wormley, of Columbus, Ohio; Dr. Stevens, of Olean, New York, and many others. One of the most important additions consists of a series of nineteen species of *Cyprinodonts*, labelled by Prof. Agassiz, and serving as types of the paper on this family which he proposes to present to the Institution. Numerous species of North European fishes were presented by the Swedish Academy of Sciences, Stockholm.

Invertebrates.—Very important additions have been made to the aquatic species of invertebrates from various sources. Among the most valuable are those sent from the Tortugas by Lieut. Wright, embracing a large number of new and rare forms. A collection of similar extent, from the coast of Carolina, was forwarded by Lieut. Kurtz. *Unionidæ* have been received from Col. Wailes, of Mississippi, and Prof. Safford, of Tennessee, in large numbers. A small collection of land shells, from Oregon, was presented by Dr. Shumard: out of fourteen species furnished, six are new to science. A very important addition to the collection consists of a series of eighty species of shells from Greenland, presented by Mr. Christian Drewsen, of Copenhagen.

The *insects* received have been few in number, and these principally from Mr. Fairie, who sent quite a large collection of *Lepidoptera* and *Coleoptera*. Many species of *Orthoptera* were procured on Red river by Captain Marcy, and in Texas by Mr. Lindheimer.

Plants.—A collection of plants of Delaware county, Pennsylvania, was presented by the Delaware County Institute. A suite of plants, collected by Lindheimer in Texas, was obtained through Dr. Engelmann. Dr. Shumard sent a small collection from Oregon. Valuable donations of algæ were made to the Institution by Miss Brewer, Lieut. Kurtz, &c. A small series belonging to Lieut. Lynch's collections on the shores of the Dead Sea was presented by Hon. J. P. Kennedy.

Fossils and minerals.—The Commissioner of the Land Office has deposited with the Institution additional specimens of fossils from the Minnesota survey, collected by Dr. Owen, including some of the vertebrate remains from Nebraska. Infusorial earths from Virginia have been received from Prof. William B. Rogers and Dr. Beck. A suite of coal plants was sent from the mines above Harrisburg, Pennsylvania, and a series of silurian fossils from Dr. Stevens, of Olean. Remains of fossil elephant, from near Wheeling, were presented by Mr. Alfred Sears, and of mastodon, from Fort Gibson, by Mr. B. Marshall. Lieut. Gilliss forwarded a very interesting collection of fossils from Chili. The principal minerals received consisted of gold and silver ores from Mexico, presented by Dr. Jarvis, together with copper ores from Chili, by Lieut. Gilliss.

Ethnology.—Various remains of the North American Indians have been received by the Institution during the year; but much the most important addition in this department is to be found in a large number of axes, arrowheads, and other stone instruments, from Denmark, presented by Prof. C. C. Rafn, of Copenhagen; thus affording an interesting opportunity of comparing the closely allied implements used by the aborigines of Europe and of North America.

(b.)—PRESENT CONDITION OF THE COLLECTIONS.

During the year as much progress has been made in the final determination and arrangement of the specimens as the press of other occupations would allow. Those in alcohol have been kept in proper condition, and such dried skins have been baked as needed this process as a preservative against the attacks of insects. A number of mammals, preserved in alcohol, have been dried for the purpose of ascertaining accurately their specific character. The unfinished state of the museum apartment renders it necessary to confine the collections in as small space as possible, none but basement rooms being available. The labor of labelling the specimens is greatly increased by the fact that many of the species are undescribed. In illustration of this I may state, that in the single department of the serpents, the Institution possesses more than twice as many North American species as are given in the great work of Dr. Holbrook. To render this mass of matter immediately available to science, the preparation of catalogues has been commenced, similar to those of the British Museum and the Museum of Natural History in Paris. In these, full descriptions of the genera and species will be given, and such known species as may not have been received by the Institution will be inserted in an appendix. Each volume will thus constitute a complete manual of a portion of the natural history of North America. The first of these catalogues—that of the serpents—is in press, and will very shortly be finished.

(c.)—SCIENTIFIC EXCHANGES.

A great many applications have been made to the Institution, by parties at home and abroad, for information or assistance in making exchanges of specimens of natural history. Such help is always cheerfully rendered, and some important relationships have been thus established. Some of the gentlemen who have made these applications are as follows:

CHRISTIAN DREWSEN, Copenhagen, desires to exchange North European and Algerian *Coleoptera* for *Coleoptera*, *Lepidoptera*, and *Hemiptera*, of North America.

FRIEDRICH STURM, Nürnberg, and ADOLPH SENONER, Vienna, wish American ferns in exchange for European.

Dr. G. VON DEM BUSCH, Bremen, wants North American shells, especially *Melania*, in exchange for European.

Prof. H. R. GÖPPERT, Breslau, director of the botanic garden, wants seeds of all plants common to Europe and America, as an auxiliary to certain investigations upon the influence of climatological conditions upon vegetation.

B. CAZENIVETTE, Rue Pelegrin, and DUMOULIN, ainé, 8 Place de la Bourse, Bordeaux, desire North American fresh-water and land shells in exchange for European.

Dr. FRANCESCO LANZA, of Spalato, in Dalmatia, desires to exchange fossils; minerals, reptiles, shells, plants, &c., of Dalmatia, and the Adriatic, for crystallized minerals and shells from North America.

(d.)—REGISTRY OF PERIODICAL PHENOMENA.

The blanks for the registry of the periodical phenomena of animal and vegetable life in 1852, were distributed early in the last spring. Most of these have been returned filled, and embody information of the highest interest. Many were accompanied by carefully-prepared lists of the animals and plants of their respective stations; constituting material towards an accurate determination of the geographical distribution of species. The results thus obtained will be carefully tabulated and published at the earliest practicable moment.

Respectfully submitted:

SPENCER F. BAIRD,
Assistant Secretary.

APPENDIX A.

Account of scientific explorations, and reports on explorations, made in America, during the year 1852: By SPENCER F. BAIRD.

In the present article I propose to give a brief account of the progress of scientific explorations in America during the year 1852. It will be seen that the record is much more extensive than that of the last year, affording gratifying proof of the increasing interest felt by government and individuals in the development of the geography, geology, ethnology, and physical and natural science of this country.

I propose to take up the history of discovery in the following order:

1. Smithsonian Institution.
2. War Department.
3. Topographical Bureau.
4. Department of the Interior.
5. Land Office.
6. Navy Department.
7. Coast Survey.
8. Domestic States, Societies, and Individuals.
9. European States, Societies, and Individuals.

As the account of the operations of the Smithsonian Institution, in the way of exploration, has already been given in your report, I shall proceed directly to the second head.

2. WAR DEPARTMENT.

Exploration of Red River.—In June of last year an expedition was sent out by the War Department for the purpose of exploring the country along the Red river of Arkansas and its tributaries, under command of Captain R. B. Marcy, so well known as an energetic explorer, and accompanied by Captain Geo. B. McClellan. The party started from Cache creek, a stream rising in the Wichita mountains and emptying into Red river. From this point they passed along the ridge separating Cache creek from Red river, to Otter creek. The mouth of this stream, in lat. $34^{\circ} 30'$ and long. $100^{\circ} 10'$, was found to constitute the southwestern terminus of the Wichita mountains, a range about seventy miles long and twenty-five wide. In

these mountains, and beyond, many interesting discoveries of granite, basalt, great beds of gypsum, &c., were made. Passing along the north fork of Red river to its head, they crossed over to the Canadian. From this stream they struck and explored the middle and south forks of Red river; along the latter of which they returned. Astronomical and other observations were diligently made throughout the journey, and many important facts ascertained in regard to the geology, agricultural capabilities, and geography of this region, hitherto nearly a blank in our maps. A very extensive collection of plants, reptiles, fishes, insects, fossil remains, &c., was made, which, besides embracing much that is new, will tend to throw great light upon the geographical distribution of species.

3. TOPOGRAPHICAL BUREAU.

Exploration of the Zuni and Colorado rivers.—The expedition for the exploration of the Zuni river, organized under Captain L. Sitgreaves, returned last winter, after having accomplished all its objects in a remarkably short space of time. Accompanied by Lieut. J. G. Parke, Dr. S. W. Woodhouse as surgeon and naturalist, Mr. R. H. Kern as artist, and Mr. A. Leroux as guide, the party left the pueblo of Zuni on the 24th of September with an escort of thirty men, commanded by Major H. L. Kendrick, of the 3d artillery. Passing down the Zuni (which proved to be an inconsiderable stream) to its junction with the Little Colorado, sixty miles below, they continued down to the Cascades, some eighty-six miles further, where the stream falls into a deep cañon. From this point they were compelled to strike across to the Colorado, and descended this stream about two hundred and fifty miles to its mouth. Crossing over to San Diego, they arrived at the termination of that part of their journey in the end of December. A great part of the route never having been before explored, much was done by the expedition in rectifying and improving the geography of the region, while Dr. Woodhouse made use of the scanty opportunities afforded by the barren soil, to collect specimens of natural history, many of which have proved new to science. These will be published in the report of the expedition, shortly to be submitted to Congress.

Survey of the Lakes.—The survey of the Northern lakes has been carried on with great energy during the past year. Besides extending and verifying the triangulations in the vicinity of Green Bay and Mackinac, a base line was measured at the latter place under the immediate direction of Captain T. J. Lee. The apparatus with which this important work was conducted was made by Mr. Wm. Wurdemann of this city, and is considered to be fully equal, if not to surpass any ever used before for similar purposes.

Exploration of Utah.—The report of Captain Stansbury of his exploration of the valley of the Great Salt Lake appeared in June, 1852. As in most of the recent explorations undertaken by the Topographical Bureau, many important discoveries in natural science were made during this exploration, the results of which are here given. Many new species of mammals, birds, reptiles, insects, plants, and fossil remains, are first published in this report. The additions to our geographical information have also been very extensive, tending greatly

to clear up the obscurity which prevails in regard to the geography of the great Central Basin. The discovery of a new route and pass through the Rocky mountains is also one of very great importance.

4. DEPARTMENT OF THE INTERIOR.

United States and Mexican Boundary Survey.—During the past year the operations on the boundary line between the United States and Mexico, under John R. Bartlett, esq., and Major William H. Emory, have been prosecuted with great vigor. The survey of the river Gila has been completed from its confluence with the Colorado to the point where it is struck by the western boundary of New Mexico. The Rio Grande has also been surveyed from the initial point agreed upon, to the Laredo, with the exception of a strip between San Vicente and the mouth of the Pecos. The connecting link between the two lines has also been surveyed provisionally. It is probable that, should Congress make suitable appropriations, the whole field work will be completed in 1853. In addition to the exceedingly numerous and accurate observations in astronomy, geography, meteorology, and terrestrial magnetism, the collections in geology, mineralogy, zoology, and botany, made by Messrs. Parry, Wright, Clark, Bigelow, Thurber, and Webb, have been of great extent and value, supplying us with almost as thorough a knowledge of many forms of organic life in this country as of the long-settled portions of the United States. The perseverance of the gentlemen of the commission has been rewarded by the acquisition to science of a large number of undescribed and rare species.

5. LAND OFFICE.

Geological Survey of Oregon, by Drs. Evans and Shumard.—Dr. Evans left St. Louis in the month of June, and ascended the Missouri to the mouth of the Yellowstone. From this point he crossed over to the Pacific coast, pursuing an entirely different route from that traversed by other explorers. His route passed through the very centre of the Black Feet country, and over the Rocky, Blue Range, and Cascade mountains, terminating at Oregon City; which he reached about the middle of October. In this journey, though accompanied a great portion of the way by only a single man, he explored the main chain of the Rocky mountains for a distance of nearly two hundred miles, without a guide, or even a trail, and discovered a pass several degrees farther north than that usually travelled. The observations made along the line of his route will enable him to construct a geological section from the Mississippi river to the Pacific ocean. Many geographical facts were collected of the highest value, which will constitute a very important addition to our stock of knowledge in relation to a portion of country hitherto almost entirely unknown.

The assistant geologist, Dr. Shumard, embarked from New York in the latter part of June of the same year, and proceeded, by way of the isthmus of Panama, to San Francisco, and thence to Oregon, where he arrived early in August, and shortly after began his explorations, following the main lines of survey, and locating his observations, as far as practicable, by townships and sections.

In addition to the materials for accurate geographical determinations,

the results of the observations of Drs. Evans and Shumard have been of the greatest practical importance. Valuable and extensive deposits of limestone, porcelain earth, tertiary coal, &c., were ascertained to exist.

Geological Survey of Lake Superior.—In obedience to instructions from the Land Office, Messrs. Foster and Whitney revisited the scene of their previous explorations on Lake Superior, with the view of collecting the most recent information respecting the mining region. They will probably submit the result to Congress in the form of a final report upon the entire subject of the mineral lands of this interesting region.

The final report of Dr. D. D. Owen on the Geology of Wisconsin, Iowa, and Minnesota, was published towards the end of the year 1852. This constitutes the most elaborate work of the kind ever issued by government, consisting of two quarto volumes, with numerous illustrations on wood and steel. The palæontological portion is of much importance, containing, in addition to the invertebrata described by Dr. Owen, a paper by Dr. Joseph Leidy on the fossil *Rhinoceros*, *Palæotherium*, *Archæotherium*, *Testudo*, &c., of the Mauvaises Terres.

The second part of the *Report of Messrs. Foster and Whitney on the Geology of Lake Superior* also appeared during the past year. With the able assistance of Professor James Hall, they have been enabled to present some very important comparisons between the fossils and fossiliferous rocks of Europe and America, besides describing many new species.

6. NAVY DEPARTMENT.

The year 1852 will ever be memorable in the annals of the American navy for the extent of the explorations either completed or commenced within its limits. Under the liberal administration and enlightened policy of the Hon. J. P. Kennedy, Secretary of the Navy, all the disposable force of the department has been brought to bear upon the advancement of geographical knowledge.

Astronomical Expedition to Chili.—Lieut. Gilliss returned in November last from a three years' residence at Santiago, in Chili, to which place he had gone for the purpose of observing the parallax of Venus. During the time of his absence he made more than forty thousand observations on this planet, besides gathering a very large number of facts in regard to other departments of astronomy, magnetism, meteorology, earthquakes, geography, &c. He also made very valuable collections in natural history, especially in ornithology, in many respects superior to those collected and published by Claude Gay, in his *History of Chili*.

Lieut. McRae, who, with Lieut. Phelps, had been the companion of Lieut. Gilliss, was detached by him to carry a magnetical and meteorological profile across the continent over the Andes. This route will be, for the most part, through an unexplored region, and the result will no doubt be of very great interest.

Exploration of the Amazon.—Lieut. Herndon, U. S. N., returned in the summer from his exploration, in connexion with Lieut. Gibbon, of the Amazon and its tributaries. As the most feasible way of penetrating this region, they crossed the Cordilleras, in Peru and Bolivia,

and passing through an almost unknown geographical region, descended the Amazon to its mouth. Lieut. Gibbon took a somewhat different route, and has not yet returned. Both gentlemen have, in addition to their physical investigations, made copious notes on the natural history of the countries traversed, which will, in time, be presented to Congress.

Although not properly coming within the history of the past year, it may not be inappropriate to mention some of the enterprises in contemplation for 1853, which are in an active state of forwardness, and which bid fair to render this year conspicuous above all others in the annals of American discovery. The most important of these is the proposed *survey of the seas of the North Pacific and Behring's straits*, under Captain Cadwallader Ringgold. This officer will leave early in the spring with four vessels, all constructed and fitted for the purpose. He will take with him a complete outfit of instruments and apparatus for the successful prosecution of all branches of physical science, in addition to the hydrographical details, upon which he will, of course, bestow especial attention. By the liberal construction of the law of Congress ordering this survey, on the part of Mr. Kennedy, he will be accompanied by a corps of naturalists well skilled in their respective duties, and provided with all the material necessary to a successful prosecution of their investigations and explorations.

The next exploration in contemplation is that of the *river Parana and its tributaries*. Captain Page has been assigned to this duty, and, in command of a small steamer, will start in a few weeks. The limited accommodations on board prevented the addition of a naturalist to the corps, but this want will be made up by the zeal of the officers themselves, who go fully provided with the means for making collections. Much of interest will doubtless be furnished by the plants of this unexplored region. The expedition will be accompanied by an experienced horticulturalist, who will collect roots, seeds, and living plants, as well as dried specimens.

Dr. Kane, U. S. N., so well known as an enterprising traveller, will proceed next April on a second voyage *in search of Sir John Franklin*. Supplied with the requisite funds by the munificence of Mr. Henry Grinnell and Mr. George Peabody, in connexion with the Geographical Society of New York, and of the Smithsonian Institution, and accompanied by a picked crew, Dr. Kane will undoubtedly add much to our previous knowledge of the meteorology, magnetism, geography, and natural history of the remote regions of the north. The expedition will be accompanied by a skilful collector, who will bestow especial attention upon the minute invertebrata of the Arctic ocean.

Captain *Lynch*, to whom we are indebted for so much information respecting the Dead Sea, has again started upon a similar enterprise. Under the direction of the Secretary of the Navy, he will proceed to the coast of western Africa, touching at various points as far as the river Gaboon, for the purpose of ascertaining the most suitable point for penetrating this little known continent. As soon as his reconnoissance has been completed, he will be supplied from home with an organization of vessels, men, apparatus, &c., necessary to continue his researches. Much is anticipated for science in this expedition, in

addition to the more immediate object of obtaining reliable information in respect to a future extension of colonization on the coast.

7. COAST SURVEY.

This highly important work, under the able superintendence of Prof. A. D. Bache, has progressed rapidly during the past year. The division into sections, adopted some years ago, seconded by liberal appropriations from Congress, has enabled the Superintendent to bring out results of the greatest value. The sections at present established are as follows :

Section I. From Passamaquoddy bay to Point Judith, including coasts of Maine, New Hampshire, Massachusetts, and Rhode Island.

Section II. From Point Judith to Cape Henlopen, including coasts of Connecticut, New York, New Jersey, Pennsylvania, and Delaware.

Section III. From Cape Henlopen to Cape Henry, including coasts of Delaware, Maryland, and Virginia.

Section IV. From Cape Henry to Cape Fear, including coasts of Virginia and North Carolina.

Section V. From Cape Fear to the St. Mary's river, including coasts of South Carolina and Georgia.

Section VI. From St. Mary's river to St. Joseph's bay, under Anclote keys, including the Florida reefs and keys.

Section VII. From St. Joseph's bay to Mobile Point, including the remainder of the coast of Florida.

Section VIII. From Mobile Point to Vermillion bay, including coasts of Alabama, Mississippi, and Louisiana.

Section IX. From Vermillion bay to Mexico, including part of coast of Louisiana and Texas.

Sections X and XI. Coast of California and Oregon.

Our limits will not allow us to go into the particulars of operations on this great national work further than to state that, in every Section, triangulations, surveys, and soundings, in great number, have been made. The charts and sketches published or in progress amount to upwards of eighty, and in point of mechanical execution and accuracy are unsurpassed. In addition to the strictly hydrographical and geodetical operations, observations have been made in magnetism, meteorology, astronomy, tidal phenomena, &c., of the highest importance. Great interest, too, is felt by many officers of the survey, in different branches of natural history, which will yield practical results of great moment.

8. DOMESTIC STATES, SOCIETIES, AND INDIVIDUALS.

State Surveys.—The geological surveys of the different States, as referred to in my last report, are progressing with considerable rapidity. New York has published three additional volumes of her series of magnificent quartos—one of paleontology, by Prof. James Hall; the others on agriculture and on fruits, by Prof. E. Emmons. The field-work of the Pennsylvania survey, under Prof. H. D. Rogers, is nearly completed, and the final report in active state of forwardness. North Carolina, Illinois, Mississippi, and the other States, are actively engaged in the development of their geological and paleontological history, under

the supervision of the able gentlemen to whom these trusts have been committed.

Antiquities of Wisconsin.—Mr. J. A. Lapham, of Milwaukie, has completed the elaborate survey of the antiquities of Wisconsin, upon which he has been so long engaged, under the patronage of the American Antiquarian Society at Worcester. The manuscript record of his operations is illustrated by a large number of quarto illustrations and many wood-cut figures—the whole constituting the most important contribution to American ethnology made, since the publication of the work by Messrs. Squier and Davis, on the ancient monuments of the Mississippi valley.

Dr. Adolphus L. Heermann, of Philadelphia, returned last spring from several years' residence in California. During his stay he devoted especial attention to the subject of ornithology, and with such success that his collections far exceed in number and value all others previously made in that region. He also procured many specimens of mammals, reptiles, insects, &c.—the whole furnishing a large amount of materials new to science.

Colonel *George A. McCall*, of the United States army, during a recent tour through Oregon and California, in pursuance of his duties as inspector general, embraced the occasion, as in previous instances, to secure such zoological specimens as fell in his way. The most interesting acquisition thus made was that of a new genus of Saurians, somewhat resembling *Phrynosoma* in the presence of spines on the head, since characterized by Dr. Hallowell under the name of *Anota*.

Reference has already been made to the very great additions to our knowledge of the geographical range and association of species furnished by the collections and reports of the numerous correspondents of the Smithsonian Institution, scattered, as they are, over the entire area of the United States. The particular record of their operations will be found in the list of additions to the museum of the Smithsonian Institution.

Mr. *William Stimpson*, whose labors have been referred to in a previous report, during last summer again visited the rocky shores of Grand Manan, where he found a rich harvest. Many new species of marine invertebrates were procured, and others added to the American fauna, which were previously known only on the coast of Europe or of Greenland. The results of his investigations he proposes to present to the Smithsonian Institution, in the form of a memoir on the marine invertebrata of Grand Manan. This gentleman has been selected to accompany the expedition of Captain Ringgold, as zoologist, and will, doubtless, in connexion with his associate, Mr. Wright, as botanist, be the means of greatly extending the domain of natural science.

Marine Algæ.—The publication, by the Smithsonian Institution, of *Harvey's Marine Algæ of North America*, has been the means of exciting great interest in the study of this attractive department of botany. Numerous collections have been made during the past summer, by different individuals, embracing many species additional to those described by Dr. Harvey.

Professor *C. B. Adams*, of Amherst College, having just completed his work on the shells of Panama, and desirous of procuring additional

facts in regard to the distribution of marine animals, visited the island of St. Thomas in December last; whence, after spending some time there, he proposes to proceed to the other islands of the same group. An appropriation has been made by the Institution to defray a portion of his expenses.*

Exploration of Garden Key, Florida.—A very thorough exploration of Garden Key, by Lieut. Wright, resulted in the addition of many new and rare species of marine animals. The collections thus made were forwarded by him to the Smithsonian Institution, where they arrived in perfect order during the past summer.

9. FOREIGN STATES, SOCIETIES, AND INDIVIDUALS.

During the past year several foreign savans of eminence have visited this country for the purpose of commencing explorations or continuing those previously begun. Sir Charles Lyell made his third visit to the United States, and, as on previous occasions, endeavored to clear up certain doubtful points in the geology of this country. Dr. Charles Scherzer, of Vienna, and Dr. Moritz Wagner, of Munich, were sent out, under the patronage of the Academy of Sciences of Vienna, for the purpose of instituting inquiries into the social and civil condition, the physical geography, and the natural history of North America. In pursuance of this object they have already visited the region of the lakes and of the Mississippi, and are now in New Orleans, preparing their reports upon what they have seen. It is their intention, some time in 1853, to penetrate into South America, and to pass several years in explorations in various unknown parts of the continent.

Prince Paul, of Wurtemberg, well known as an enterprising traveller and naturalist, has, for the present, completed his collections and investigations in the United States, and is about starting for Chili, where he proposes to continue his labors. His specimens have all been transmitted to Europe, where they will be elaborated as soon as possible.

A valuable report has recently been published in Germany upon the cretaceous formation of Texas, and its included fossils. The author, Dr. Ferdinand Roemer, visited this country some years ago with special reference to this geological formation, and has presented in the above work, in an elaborate form, what was given in less detail in a smaller volume issued in 1849. The determinations of Dr. Roemer are of much interest, as constituting nearly all that is known of the geology of Texas.

Very important contributions to our knowledge of the Northwest have been made by the reports of the voyage of H. B. M. ship the *Herald*. This vessel, during several years' absence in the region of Behring's straits, made numerous collections in natural history, the accounts of which are now in course of publication. One of the parts already issued consists of a minute account of the remarkable ice cliffs of Kotzebue's sound, and the remains of various species of the elephant, ox, deer, musk-ox, &c., imbedded therein. Another is occupied by the *botany* of Western Esquimaux land.

* As this Report is passing through the press, the Institution has heard, with deep regret, of the death, at St. Thomas, of Professor Adams.

APPENDIX B.

Alphabetical list of donors to the Museum of the Smithsonian Institution.

Academy of Natural Sciences.—Skins of mammalia from Oregon, (in exchange.)

Academy of Sciences, Stockholm.—Collection of skins and skeletons of mammals, with reptiles and fishes preserved in alcohol, from Northern Europe.

Agassiz, Prof. L.—Nineteen species of North American *Cyprinodonts*.

Ames, James T., and H. K. Brown.—Statuettes of male and female Ottawas and of male Chippewas, modelled by H. K. Brown, and cast in bronze by James T. Ames, at Springfield, Massachusetts.

Baird, S. F.—Fishes and reptiles from Massachusetts and New Hampshire.

Baird, W. M.—Specimens of *Pimelodus* from Reading, Pennsylvania.

Barker, Dr. S. B.—Fishes and reptiles from Charleston, South Carolina.

Barratt, Dr. J. B.—Reptiles, fishes, &c., from Abbeville, South Carolina.

Bartlett, Joshua.—Shells, &c., from Whitehead, Maine; skin of lump fish; various fishes and crustaceans, in alcohol.

Beck, Dr. Wm. B., U. S. N.—Fossil wood from near Fredericksburg, Virginia. Infusorial earth from Rappahannock cliffs.

Bibb, George R.—Fishes and reptiles from Russellville, Kentucky.

Blunt, Lieut., U. S. N.—Minerals from California.

Boden, Dan. B.—Specimen of *Lota* from Otsego Lake.

Bowman, J. Soule.—Reptiles from California, and fishes from the Sweetwater branch of the Platte.

Boyle, Dr. C. C.—Reptiles from California, (dep.)

Brewer, Miss.—Prepared Algae from the coast of Massachusetts.

Butterfield, Hon. J.—Three boxes of geological specimens collected by Dr. D. Owen in his U. S. surveys.

Delaware County Institute, through George Smith.—Collection of the plants of Delaware county, Pennsylvania.

Denig, E. T.—Skeleton of female gray wolf, from the Yellowstone river.

Dyer, G. H.—Skin of albatros—Cape Horn.

Drewsen, Christian.—Eighty species of Greenland shells.

Eakins, D. W.—Stone pipe dug up from a depth of thirty-two feet, in the Cherokee nation.

Edwards, Dr., U. S. A.—Skulls of Indians, buffalo, bighorn, &c.

Emory, Major W. H.—Skins and skeletons of mammalia, from Texas.

Engelmann, Dr. George.—Suite of plants collected by F. Lindheimer in Texas, and by himself about St. Louis.

Fairie, James.—Reptiles, insects, stalactites, and a specimen of maguery plant, from Orizaba. Collection of reptiles, birds, &c., from Morehouse parish, Louisiana.

Fox, Rev. Charles.—Several very full collections of fishes, reptiles, &c., from Grosse Isle, Michigan.

Gilliss, Lieut. J. M., U. S. N.—Fossils from Caldera, Chili.

Girard, C.—Fishes from Maine.

Guest, W. E.—Two heads of common deer, (*Cervus Virginianus*), skins of cross fox and otter.

Hopkins, Wm.—Collection of fishes from Cayuga lake.

Hoy, Dr. P. R.—Fishes and reptiles from Racine, Wisconsin; skins of birds from Wisconsin.

Jarvis, Dr., U. S. A.—Gold and silver ores from Mexico.

Keller, J. S.—Geological specimens from Schuylkill county, Pennsylvania.

Kelsey, W.—Crystallized copper from Cliff mine, Lake Superior.

Kennedy, Hon. J. P., Secretary of the Navy.—Plants collected around the Dead Sea by Captain Lynch, U. S. N.

Kurtz, Lieut. J. D.—Large collection of recent and fossil shells from the coast of South Carolina; shells and crustaceans, in alcohol and dried, from Charleston harbor; algæ from the same locality.

Lindheimer, F.—Fishes, reptiles, crustaceans, &c., from New Braunfels, Texas.

Lewis, K.—Stone used by the Indians in dressing skins, from the fork of the Arkansas and Verdigris rivers.

Marsh, Hon. George P.—Collection of shells, seeds, crocodiles' eggs, &c., from Egypt.

Marshall, B.—Tooth of *mastodon*, found thirty-five miles above the mouth of Grand river, near Fort Gibson.

Maury, Lieut. M. F.—Skin of young *manatus*, from the Amazon.

Marcy, Captain R. B., and Captain McClellan.—Fishes, reptiles, and insects, from Red river, Arkansas.

Norwood, Dr. J. G.—Fishes from the Wabash river.

Porter, Professor T. C.—Fishes, &c., from near Mercersburg, Pa.

Prescott, Dr. Wm.—Typical specimen of *Coregonus novangliæ*. Lake Winnipisiogee.

Prince, George—Specimen of *Chironectes*, crustacea, and gulf-weed, from the Gulf Stream.

Rafn, Professor C. C., through J. F. Jiltson.—Stone axes, arrow-heads, &c., from Denmark.

Rodgers, Lieut. John, U. S. N.—Fish caught in sounding-line off Cape Florida; soundings from same locality.

Rogers, Professor W. B.—Infusorial earth from near Richmond, Virginia, and from Barbadoes.

Ruhl, F.—Skeletons of bat, *Vesperilio pruinosis*; of a fish, *Tautoga Americana*; skeleton of *Cotuber* and skin of *Harelda glacialis*, from New York.

Safford, Professor J. M.—Fifty species of *Unionida*, from Tennessee.

Sears, Alfred.—Tusk and tooth of fossil elephant, from diluvium near Wheeling; Indian remains from a mound near the same locality.

Shumard, Dr. B. F.—Plants and shells collected in Oregon; collection of reptiles from Mississippi.

Stanley, J. M.—Porcupine quills, as colored for manufacturing purposes, by the Indians of Arkansas; skin of *Felis onca*, or jaguar, and of *Dicotyles torquatus*, or peccary, from Texas; interlocked horns of two deer, *Cervus Virginianus*; horns of ditto in the velvet.

Stevens, Dr. R. P.—Fossil remains, shells, fishes, reptiles, &c., from Olean, New York.

Thompson, Rev. Zadock.—Specimens of *Leuciscus atromaculatus*, and *cornutus*, from Vermont; *Menobranthus*, and various species of fishes, from Lake Champlain.

Totten, Lieut. James, U. S. A.—Leaf of Sisal hemp, from Florida.

Varden, John.—Specimens of coal, from the great London exhibition.

Wuiles, Col. B. L. C.—Recent and fossil shells, from Mississippi; marine fishes, from the coast of Mississippi; *Unionidae* and *Chelonia*, from Mississippi.

Wallington, F.—Nests and eggs of birds, from Garden Key, Florida.

Wheatland, Dr. H.—Living specimens of *Testudo tabulata*, from Para, and "*Scaphiopus solitarius*," from Danvers, Massachusetts.

Wheeler, Dr. S. J.—Amber, from near Murfreesborough, N. Carolina.

White, B. A.—Fishes from Oconee river, Georgia.

Whitney, Samuel.—Native copper and silver, from Lake Superior.

Williams, Professor L. D.—Specimens of *Menopoma* and *Menobranthus*.

Wormley, Dr. T. G.—Fishes and shells, from the vicinity of Columbus, Ohio.

Wright, Lieut. H. G.—Fishes, corals, crustacea, and shells, from Tortugas.

Wright, Charles.—Skins of birds and lynx, with skull of wolf; fossil shells, &c., from near Frontera, Texas.

Donor unknown.—Fossils from Middlesex county, Virginia.

" " Fossil coal plants from near Harrisburg, Pa.

" " Minerals from Washington county, Maryland.

" " Specimens of *Amia*, *Catostomus*, *Clupea*, and *Coluber Alleghaniensis*.

APPENDIX C.

List of Foreign Institutions to which Volumes III and IV, Smithsonian Contributions to Knowledge, were sent, June, 1852.

SWEDEN.

Lund.—University Library.

Stockholm.—Kongliga Svenska Vetenskaps Akademien.

Vitterhets Historie och Antiquitets Akademien.

Riksbiblioteket.

Upsala.—University Library.

Société Royale des Sciences à Upsal.

NORWAY.

Bergen.—Bergen's Museum.

Christiania.—The University Library.

ICELAND.

Reykjavik.—Islands Stifisbokasafn.

DENMARK.

Copenhagen.—Kongelige Nordiske Oldskrift Selskab.
Kongelige Danske Videnskabernes Selskab.
Kongelige Bibliothek.

RUSSIA.

Dorpat.—Observatoire Impérial.
Kasan.—University Library.
Moscow.—Société Impériale des Naturalistes de Moscou.
St. Petersburg.—Académie Impériale des Sciences.
Imperial Public Library.
Administration Impériale des Mines.

HOLLAND.

Amsterdam.—Académie des Sciences.
Haarlem.—Hollandsche Maatschappij der Wetenschappen.
Hague.—Royal Library.
Leyden.—University Library.
Middelburg.—Zeeuwsche Genootschap der Wetenschappen.
Rotterdam.—Bataafsch Genootschap der proefondervindelijke Wijsbegeerte.
Utrecht.—Utregtsch Genootschap van Kunsten en Wetenschappen.

GERMANY. .

Berlin.—Königlich-Preussische Akademie der Wissenschaften.
Königliche Bibliothek.
Königliches Museum.
Gesellschaft Naturforschender Freunde.
Bonn.—University Library.
Bremen.—Stadt-Bibliothek.
Breslau and Bonn.—K. L. C. Akademie der Naturforscher
Dresden.—Königliche Bibliothek.
Erlangen.—University Library.
Frankfurt am Main.—Senckenbergische Naturforschende Gesellschaft.
Freiberg.—Königlich-Sächsische Bergakademie.
Freiburg.—University Library.
Giessen.—University Library.
Greifswald.—University Library.
Goettingen.—Königliche Gesellschaft der Wissenschaften.
University Library.
Halle.—University Library.
Hamburg.—Stadt-Bibliothek.
University Library.

Hannover.—Royal Library.

Heidelberg.—University Library.

Innsbruck.—University Library.

Jena.—University Library.

Karlsruhe.—Grossherzogliche Hofbibliothek.

Koenigsberg.—University Library.

Leipsic.—Stadt-Bibliothek.

Königliche Sächsische Gesellschaft.

Marburg.—Gesellschaft zur Beförderung der Gesammten Naturwissenschaften.

University Library.

Munich.—Königlich Bayerische Akademie der Wissenschaften.

Königliche Hof-und Staatsbibliothek.

Prag.—University Library.

Königliche Böhmisches Gesellschaft der Wissenschaften.

Böhmisches Museum.

Pesth.—University Library.

Ungarische Gelehrte Gesellschaft.

Stuttgart.—Königliche Oeffentliche Bibliothek.

Verein für Vaterländische Naturkunde.

Tübingen.—University Library.

Vienna.—K. K. Akademie der Orientalischen Sprachen.

Kaiserliche Hofbibliothek.

University Library.

Kaiserliche Akademie der Wissenschaften.

Würzburg.—University Library.

BELGIUM.

Bruxelles.—Académie Royale des Sciences, des Lettres et des Beaux-Arts.

Observatoire Royal.

City Library.

Gand.—University Library.

Liege.—Société Royale des Sciences.

Louvain.—Université Catholique.

FRANCE.

Bordeaux.—Académie des Sciences, Belles-Lettres et Arts.

Société Linnéenne.

Cacn.—Académie des Sciences, Arts et Belles-Lettres.

Société Linnéenne de Normandie.

Société des Antiquaires de Normandie.

Dijon.—Académie des Sciences, Arts et Belles-Lettres.

Lille.—Société des Sciences, de l'Agriculture et des Arts.

Mende.—Société d'Agriculture, Commerce, Sciences, et Arts.

Lyon.—Société d'Agriculture, d'Histoire Naturelle, et des Arts Utiles.

Académie des Sciences, Belles-Lettres et Arts.

Société Linnéenne.

Metz.—Académie Nationale.

Montpellier.—Société Archéologique.

Orleans.—Société des Sciences, Belles-Lettres et Arts.

Paris.—L'Institut de France.

Société des Antiquaires.

“ Asiaticque.

“ de Géographie.

“ Géologique de France.

“ Philomatique.

Bibliothèque Nationale.

Bibliothèque du Jardin des Plantes.

L'Ecole des Mines.

Société Ethnologique.

Bibliothèque de la Ville de Paris.

Société Nationale et Centrale d'Agriculture.

Ministère de la Marine.

Strasbourg.—Société des Sciences, Agriculture, et Arts, du bas Rhin.

Académie des Sciences Naturelles.

Toulouse.—Académie des Sciences, Inscriptions, et Belles-Lettres.

SWITZERLAND.

Basel.—Naturforschende Gesellschaft.

Antiquarische Gesellschaft.

Bern.—Schweizerische Gesellschaft für die Gesammten Naturwissenschaften.

Naturforschende Gesellschaft.

Geneve.—Société de Physique et d'Histoire Naturelle.

City Library.

Neuchatel.—Société des Sciences Naturelles.

Zurich.—Naturforschende Gesellschaft.

Gesellschaft für Vaterländische Alterthümer in Zurich.

ITALY.

Bologna.—Istituto delle Scienze ed Arti Liberali.

Catania.—Accademia Gioenia di Scienze Naturali.

Florence.—Biblioteca Magliabecchiana.

Lucca.—Reale Accademia Lucchese di Scienze, Lettere ed Arti.

Milan.—Biblioteca Brera.

Imperiale Regio Istituto Lombardo di Scienze, Lettere ed Arti.

Modena.—Società Italiana delle Scienze.

Naples.—Reale Accademia delle Scienze, e Belle Lettere.

Padua.—Imperiale Regia Accademia di Scienze, Lettere ed Arti.

Pisa.—University Library.

Palermo.—Royal Academy of Sciences.

Rome.—Accademia Romana di Archeologia.

Biblioteca Vaticana.

Accademia Pontifica dei Nuovi Lincei.

Turin.—Accademia Reale delle Scienze.

Venice.—Biblioteca Marciana.

PORTUGAL.

Lisbon.—Academia Real dos Sciencias.

SPAIN.

Madrid.—Real Academia Espanola.
 “ “ de la Historia.
 Academia Real de Ciencias.
 Biblioteca Real.

GREAT BRITAIN AND IRELAND.

Belfast.—Natural History and Philosophical Society.

Cambridge.—Cambridge Philosophical Society.

University Library.

Observatory.

Penzance.—Royal Geological Society of Cornwall.

Dublin.—Royal Irish Academy.

Library of Trinity College.

Edinburg.—Royal Society.

Royal Scottish Society of Arts.

Royal Observatory.

Advocates' Library.

Society of Antiquaries of Scotland.

University Library.

Wernerian Society of Natural History.

Glasgow.—University Library.

Greenwich.—Royal Observatory.

London.—Royal Society.

“ Astronomical Society.

“ Asiatic Society.

“ Geographical Society.

“ Institution.

Society of Antiquaries.

Society for the Encouragement of Arts, Manufactures, and
 Commerce.

Linnean Society.

Geological Society.

Institution of Civil Engineers.

Zoological Society.

Entomological Society.

Statistical Society.

Microscopical Society.

Ethnological Society.

British Archæological Association.

British Museum.

Library of the House of Commons.

Horticultural Society.

Chemical Society.

Archæological Institute of Great Britain and Ireland.

Board of Admiralty.
 Library of the Hon. the East India Company.
 Royal College of Surgeons.
 British Association.
 Athenæum Club.
 Philological Society.
 Museum of Practical Geology.
 London Library.

Leeds.—Philosophical and Literary Society.

Liverpool.—Free Public Library.

Manchester.—Literary and Philosophical Society.
 Free Library and Museum.

Oxford.—Bodleian Library.

Radcliffe Observatory.

St. Andrews.—University Library.

GREECE.

Athens.—University Library.

TURKEY.

Constantinople.—Library of the Sultan.

AFRICA.

Grand Cairo.—The Egyptian Society.

Liberia.—Government Library.

ASIA.

Allahabad.—Mission College.

Batavia.—Bataviaasche Genootschap van Konsten en Wetenschappen

Bombay.—Royal Asiatic Society.

Geographical Society.

Calcutta.—Asiatic Society.

Ceylon.—Asiatic Society.

Hong Kong.—Asiatic Society of China.

Madras.—Literary Society.

Manilla.—Royal Economical Society of the Philippine Islands.

WEST INDIES AND SOUTH AMERICA.

Bogota.—Sociedad Economica de Amigos del Pais.

Caracas.—Sociedad Economica de Amigos del Pais.

Habana.—Real Sociedad Economica.

Rio Janeiro.—Imperial Brazilian Historical Society.

Chili.—Government Library.

University Library.

Mexico.—Sociedad Mexicana de Geografia y Estadistica.

REPORT OF THE GENERAL ASSISTANT, IN CHARGE OF
THE METEOROLOGICAL CORRESPONDENCE.

To JOSEPH HENRY, LL. D.,

Secretary of the Smithsonian Institution :

SIR: I herewith submit to you a report, showing the condition of the meteorological correspondence of the Institution during the year 1852.

With but few exceptions, there have been received regular monthly returns of observations from all the stations previously reported, and it is gratifying to find that the system has been extended by the addition of several stations. The new observers reside chiefly in the western and southern States—districts of country from which meteorological information was much needed. The spirit manifested by the corps of observers has also improved; as is manifest from the registers being carefully kept, and the desire of all who have but few instruments to supply themselves in this respect, and at their own cost. It is to be regretted that the limited means at the disposal of the Institution for this object, and the many demands upon it for other purposes, render it inexpedient, at present, to aid observers in the purchase of instruments.

Soon after the occurrence of an earthquake in the central part of the United States, on the 29th of April, 1852, a circular was issued by the Secretary, requesting a report of any observations which had been made or could be gathered relative to that event. Numerous replies have been received, embodying facts sufficient to enable the Institution to mark the point of chief intensity, and trace out the diverging lines along which the earth-wave passed.

Another circular has been sent out during the year, requesting persons having in their possession any meteorological registers for series of years previous to the files of the Institution, which commenced early in 1849, to transmit them for reduction. A large amount of valuable information from various parts of this country has by this means been obtained. As this collection is still in progress, a report of its results is at this time withheld. The instruments belonging to the Institution, and deposited with observers, remain as before reported.

In addition to the necessary blank forms and directions for registration of the weather, the aurora, periodical phenomena of plants, and the circulars for special observations just referred to, there have been distributed to observers a copy of the following works, viz: Sixth "Annual Report of the Smithsonian Institution;" Espy's "Report on Meteorology;" "Meteorological Report of the Surgeon General of the U. S. A.," a sufficient number of copies having been kindly placed at the disposal of the Institution by the Surgeon General for this purpose; "Directions for making collections in Natural History;" "Patent Office Report, 1850;" part 2d of "Guyot's Meteorological Tables;" and other smaller publications, not necessary to be enumerated.

I am, very respectfully, your obedient servant,

E. FOREMAN,

General Assistant Smithsonian Institution.

List of persons from whom Meteorological Observations have been received at the Smithsonian Institution during the year 1852.

State.	Name.	Residence.
MAINE.....	Rev. Samuel H. Merrill..	Oldtown.
	George B. Barrows.....	Fryeburg.
	James G. Garland.....	Biddeford.
	Rufus Buck	Bucksport.
	S. A. Eveleth.....	Windham.
	Joshua Bartlett	Whitehead.
	J. D. Parker.....	Steuben.
	Christopher Prince.....	Thomaston.
	John J. Bell.....	Cannel.
NEW HAMPSHIRE...	Dr. William Prescott....	Concord.
	Robert C. Mack.....	Londonderry.
	Rev. Levi W. Leonard..	Dublin.
	Samuel N. Bell	Manchester.
VERMONT.....	Rev. Zadock Thompson..	Burlington.
	Prof. W. H. Parker.....	Middleburg.
	Lewis M. Dayton	Castleton.
	D. Underwood.....	Castleton.
	David Buckland	Brandon.
MASSACHUSETTS....	Jacob Batchelder	Lynn.
	Samuel F. Haven.....	Worcester.
	William Bacon	Richmond.
	Amasa Holcomb	Southwick.
	Henry Rice	North Attleboro'.
	C. M. Freeman	Williamstown.
	Benjamin R. Gifford....	Barnstable.
RHODE ISLAND.....	Prof. A. Caswell.....	Providence.
CONNECTICUT	Rev. T. L. Edwards....	New London.
	Prof. Aug. W. Smith....	Middletown.
	P. A. Chadbourne.....	East Windsor Hill.
NEW YORK	L. F. Munger.....	Albion.
	C. F. Maurice.....	Sing Sing.
	E. A. Dayton.....	Madrid.
	Dr. Franklin B. Hough..	Somerville.
	John Bowman.....	Baldwinsville.
	Walter D. Yale.....	Houseville.
	J. E. Breed.....	Smithville.
	Ephraim N. Byram.....	Sag Harbor.
	John Lefferts.....	Lodi.

LIST—Continued.

State.	Name.	Residence.
NEW YORK	John P. Fairchild	Seneca Falls.
	Charles A. Avery	Seneca Falls.
	John F. Jenkins	Salem Centre.
	Albert Hosmer	Fort Porter.
	J. M. Hart	Oswego.
	Mandrin Linus	Sackett's Harbor.
	James B. Trevor	Lockport.
	William E. Guest	Ogdensburg.
	Henry L. Dinsmore	Syracuse.
	Thomas B. Arden	Phillipstown.
	L. L. Fairchild	Constableville.
	Dr. P. O. Williams	Gouverneur.
NEW JERSEY	Prof. A. D. Frost	Burlington.
	R. L. Cooke	Bloomfield.
	W. A. Whitehead	Newark.
PENNSYLVANIA	W. O. Blodget	Sugar Grove.
	Prof. M. Jacobs	Gettysburg.
	Joseph Edwards }	Lima.
	J. L. Miller }	
	Rev. J. G. Ralston	Norristown.
	John Jackson	Darby.
	Andrew Roulston	Freeport.
	David Peelor	Indiana.
	Corydon Marks	Manchester.
	Dr. R. P. Stevens	Ceres.
	Dr. Paul Swift	Philadelphia.
	Ebenezer Hance	Morrisville.
	E. T. Kluger }	Nazareth.
	E. Kummer }	
	Dr. J. Heisely	Harrisburg.
	Orrin T. Hobbs	Randolph.
	M. H. Cobb	Honesdale.
	Dr. Henry Smyser	Pittsburg.
	W. W. Wilson	Pittsburg.
	John Comly	Byberry.
	Francis Schriener	Kingsley's P. O.
	Prof. J. A. Kirkpatrick ..	Philadelphia.
	Rev. David J. Eyler	Somerset.
	J. Fisher Coorlies	Philadelphia.
	M. Abbott	Summit Hill.
	Thomas Seabrook	Summitville.
	Samuel Brown	Bedford.
	Barnet McElroy	Clarksburg.

LIST—Continued.

State.	Name.	Residence.
DELAWARE	Prof. E. D. Porter	Newark.
MARYLAND	Dr. William Baer	Sykesville.
	Dr. Lewis F. Steiner.....	Baltimore.
	Henry E. Hanshew.....	Frederick.
	Lewis J. Bell.....	Leitersburg.
	Rev. John P. Carter.....	Hagerstown.
	Prof. J. P. Nelson.....	New Windsor.
DIST. OF COLUMBIA.	Smithsonian Institution..	Washington.
VIRGINIA	Dr. F. J. Mettauer.....	Prince Edward C.H.
	William Skeen.....	Huntersville.
	Lieut. R. F. Astrop.....	Crichton's Store.
	Charles Meriwether.....	Cobham.
	Dr. William N. Patton...	Lewisburg.
	David Turner.....	Richmond.
	Dr. A. M. Grinnan.....	Madison.
	Prof. G. R. Rosseter.....	Buffalo.
	L. C. Breckenstein.....	Middlesex.
	Jed. Hotchkiss.....	Bridgewater.
	J. W. Marvin.....	Winchester.
	N. B. Webster.....	Portsmouth.
	Marshall McDonald.....	Romney.
NORTH CAROLINA...	Prof. James Phillips....	Chapel Hill.
	Rev. J. A. Shepherd....	L. Scuppernong.
	Rev. Fred. Fitzgerald...	Jackson.
SOUTH CAROLINA...	H. W. Ravenel	St. John's, Berkely.
	Thornton Carpenter.....	Camden.
GEORGIA	Richard T. Gibson.....	Whitemarsh Island.
	Dr. George F. Cooper....	Perry.
	Dr. E. M. Pendleton.....	Sparta.
	Dr. John F. Posey.....	Savannah.
	P. C. Pendleton.....	Powellton.
	Prof. J. E. Willet.....	Penfield.
	John Darby.....	Culloden.
ALABAMA	S. J. Cumming.....	Monroeville.
	Alexander Winchell.....	Eutaw.
	Dr. T. C. Osborne.....	Erie.

LIST—Continued.

State.	Name.	Residence.
FLORIDA	John Newton.....	Knox Hill.
	John Pearson, U. S. N....	Pensacola.
	Judge Aug. Steele.....	Atseena Otee.
	W. S. Bogart.....	Tallahassee.
MISSISSIPPI	A. L. Hatch.....	Vicksburg.
	Thomas Oakley.....	Jackson.
LOUISIANA.....	Dr. E. H. Barton.....	New Orleans.
TEXAS	J. H. Browne.....	Huntsville.
	Pres't T. C. Ervendberg..	New Wied.
	Dr. Samuel K. Jennings..	Austin.
TENNESSEE	Prof. A. P. Stewart.....	Lebanon.
	Prof. W. M. Stewart ...	Clarksville.
	Reuben Harris, U. S. N..	Memphis.
	Prof. O. W. Morris.....	Knoxville.
	Thomas L. Sawyer.....	Dixon's Springs.
KENTUCKY	John E. Younglove.....	Bowling Green.
	Lawrence Young.....	Springdale.
	F. C. Herrick.....	Bowling Green.
	L. Berthoud.....	Maysville.
OHIO	Prof. G. N. Allen.....	Oberlin.
	Dr. E. C. Bidwell.....	Keene.
	George L. Crookham....	Jackson.
	S. N. Sanford.....	Granville.
	Edward Wade.....	Cleveland.
	Rev. J. D. McMatthews..	Hillsborough.
	Theo. G. Wormiey.....	Columbus.
	F. A. Benton.....	Mansfield.
	Prof. J. W. Andrews....	Marietta.
	Thomas F. Withrow....	Homer.
	L. Groneweg.....	Germantown.
MICHIGAN	Prof. J. R. W. Sloane....	Northwood.
	Rev. George Duffield....	Detroit.
	Dr. W. M. Campbell....	Battle Creek.
	Thomas Whelpley.....	Monroe.
	Dr. H. R. Schetterley...	Howell & Ann Arbor.
	Charles Betts.....	Burr Oak.
	Elmore Wainright.....	Clinton.
	L. Woodruff.....	Ann Arbor.
	Dr. M. K. Taylor.....	Brooklyn.

LIST—Continued.

State.	Name.	Residence.
INDIANA.....	W. W. Austin..... John Chappellsmith..... Prof. J. Tingley.....	Richmond. New Harmony. Greencastle.
ILLINOIS.....	Prof. P. P. Brown..... Dr. S. B. Mead..... Prof. Joel Hall..... Dr. J. O. Harris..... Dr. J. B. N. Klinger....	Upper Alton. Hancock. Athens. Ottowa. Plymouth.
IOWA.....	T. S. Parvin..... Ida E. Ball..... Daniel McCready..... Dr. Asa Horr.....	Muscatine. Keokuk. Fort Madison. Dubuque.
WISCONSIN.....	J. A. Lapham..... Rev. John Gridley..... Orrin Densmore..... Prof. S. P. Lathrop..... Dr. B. F. Mills..... James C. Brayton..... Thomas Gay..... C. F. Pomeroy..... Prof. J. L. Pickard..... William Ayres..... Edward Spencer.....	Milwaukee. Kenosha. Emerald Grove. Beloit. Baraboo. Aztalan. Belle Fontaine. Green Lake. Platteville. Watertown. Summit.
MINNESOTA TER....	Samuel Spates..... Charles Cavileer..... Alonzo Barnard..... Rev. Stephen R. Riggs..	Sandy Lake. Pembina. Cass Lake. Lac-qui-Parle.
INDIAN TERRITORIES.	Prof. A. G. Moffatt.....	Armstrong Acad'y.
OREGON.....	George A. Atkinson.....	Oregon City.
BRITISH POSSESSIONS	Capt. J. H. Lefroy..... Dr. Chas. Smallwood... Henry Poole.....	Toronto, Canada W. St. Martin's, " Pictou, Nova Scotia.
BERMUDA, W. I....	Capt. Alexander, R. E...	Bermuda.

List of persons from whom have been received registers of periodical phenomena observed during the year 1852.

State.	Name.	Residence.
MAINE	J. D. Parker	Steuben.
	Dr. Joseph L. Stevens..	Castine.
NEW HAMPSHIRE ...	S. N. Bell	Manchester.
	Robert C. Mack	Londonderry.
MASSACHUSETTS....	William Bacon.....	Richmond.
	Henry Rice	N. Attleboro'.
CONNECTICUT	Prof. John Johnston.....	Middletown.
NEW YORK.....	W. E. Guest.....	Ogdensburg.
	Dr. Joseph Bates.....	Lebanon Springs.
	John F. Jenkins.....	North Salem.
	Cornelius Chase	Chatham, Colum.co.
	John Bratt.....	West Point.
	L. L. Fairchild	Constableville.
	John Bowman.....	Baldwinsville.
	E. N. Byram	Sag Harbor.
	W. C. Belcher.....	Plattsburg.
NEW JERSEY.....	Rev. Prof. A. Frost.....	Burlington.
	W. A. Whitehead.....	Newark.
PENNSYLVANIA.....	J. R. Lowrie.....	Hollidaysburg.
	David Peelor.....	Indiana.
	Prof. T. C. Porter.....	Mercersburg.
	John Jackson.....	Darby.
	Dr. R. P. Stevens.....	Ceres.
	Prof. J. H. Coffin.....	Easton.
	Prof. M. Jacobs.....	Gettysburg.
	John Evans	Radnor.
	Dr. George Smith.....	Upper Darby.
	J. S. Keller	Orwigsburg.
	Prof. L. D. Williams....	Meadville.
MARYLAND	John C. Heyser.....	Hagerstown.
	Miss Harriet M. Baer ...	Sykesville.
VIRGINIA.....	Jedediah Hotchkiss.....	Mossy Creek.
	N. B. Webster.....	Portsmouth.
	R. F. Astrop	Genito.
	Dr. John R. Purdie.....	Smithfield.
	Dr. A. G. Grinnan.....	Madison C. H.

LIST—Continued.

State.	Name.	Residence.
SOUTH CAROLINA . . .	Dr. J. A. Young	Camden.
ALABAMA	Alexander Winchell	Eutaw.
	Benjamin F. Holly	Weokaville.
TEXAS	T. C. Ervendberg	New Wied.
OHIO	John Lea	Cincinnati.
	Robert Shields	Belle Centre.
	L. Gronewég	Germantown.
	Miss P. D. Childs	Keene.
MICHIGAN	L. Woodruff	Ann Arbor.
	Dr. Dennis Cooley	Washington, Ma- comb co.
MISSOURI	Prof. John M. Ordway . .	Trenton, Grundy co.
IOWA	Daniel McCready	Fort Madison.

List of persons, and stations, furnishing meteorological observations to the Regents of the University of the State of New York.

Names.	Stations.
J. L. Peet	Deaf and Dumb Institute, N. Y.
Dr. Horace Webster	Free Academy, New York.
Rev. Dr. Strong	Erasmus Hall, Flatbush, L. I.
F. H. Wines	East Hampton, Long Island.
Professor T. Cook	Albany.
John D. Watkins	Liberty, Sullivan county.
M. G. McKoon	Delhi, Delaware county.
Charles G. Hazeltine	Cherry Valley.
J. O. Stratton	Oxford, Chenango county.
Professor O. Root	Hamilton College, Clinton.
Judge E. C. Reed	Homer, Cortland county.
F. B. Downes	Ithaca, Tompkins county.
Dr. M. M. Bagg	Utica.
Daniel Gillet	Elmira.
W. C. Kenyon	Alfred Academy, Alleghany co.
E. A. Dickinson	Jamestown.

LIST—Continued.

Names.	Stations.
M. H. Christian.....	Fredonia.
Charles Winne.....	Buffalo.
Rev. Dr. C. Dewey.....	Rochester.
Rev. B. Hale.....	Geneva College, Ontario county.
Lyman W. Conkey.....	Syracuse.
W. H. Gillespie.....	Mexico, Oswego county.
Joseph W. Taylor.....	Plattsburg.
J. F. Jenkins.....	Salem Centre.
W. E. Guest.....	Ogdensburg.
Hon. Nathaniel Jones.....	Newburg.

List of the persons and stations of the meteorological system of the State of Massachusetts.

Names.	Stations.
Prof. E. S. Snell.....	Amherst College.
Prof. Albert Hopkins.....	Williams College.
Henry Rice.....	North Attleboro'.
Richard Edwards.....	Bridgewater.
Rev. David Rowe.....	Westfield.
Dr. C. H. Perkins.....	Newburyport.
Joshua Davis.....	Truro.
Hon. William Mitchell.....	Nantucket.
Dr. Edward Smith.....	Worcester.
Hon. John Brooks.....	Princeton.
Moses Waite.....	Bernardston.
W. H. Tyler.....	Pittsfield.

Meteorological returns from the following army posts, received at the office of the Surgeon General U. S. Army, for the use of which the Institution is indebted to Thomas Lawson, M. D., Surgeon General U. S. Army.

Watervleit Arsenal.
Fort Ontario.
Fort Constitution.
Fort Mifflin.
Madison Barracks.
Fort Preble.
Fort Sullivan.
Fort Columbus.
Fort Hamilton.
Allegheny Arsenal.
West Point.
Fort Trumbull.
Fort Niagara.
Fort Adams.
Carlisle Barracks.
Plattsburg Barracks.
Fort McHenry.
Fort Monroe.
Fort Moultrie.
Detroit.
Fort Mackinaw.
Fort Howard.
Fort Gratiot.
Fort Gaines.
Newport Barracks.

Mount Vernon Arsenal.
Oglethorpe Barracks.
Key West.
Fort Scott.
St. Louis.
Fort Leavenworth.
Fort Kearny.
Fort Martin Scott.
Fort Gates.
Fort McIntosh.
San Antonio.
Fort Croghan.
Fort Washita.
San Diego.
Fort Smith.
Jefferson Barracks.
Fort Brady.
Fort Lincoln.
Fort Duncan.
Ringgold Barracks
Fort Brown.
Fort Towson.
Fort Gibson.
New Orleans.

REPORT OF THE EXECUTIVE COMMITTEE.

The Executive Committee submit to the Board of Regents the following report relative to the present state of the finances and the expenditures during the year 1852:

They are happy to inform the Board that, after a strict examination of the accounts, they are enabled to present a very satisfactory statement of the present condition of the finances, and the result of the investigations as to the expenditures during the year.

The whole amount of the Smithsonian bequest deposited in the treasury of the United States (from which an annual income at 6 per cent. interest is derived, of \$30,910) is..... \$515,169 00

There is now on hand, of unexpended interest, in charge of Messrs. Corcoran & Riggs..... \$208,800

Of this sum it is proposed to expend on the building..... 58,800

Which will leave to be added to the principal, according to the original proposition of Prof.

Bache..... 150,000 00

The whole fund will then be..... 665,169 00

The following is a general view of the receipts and expenditures during the past year:

Receipts.

From the income of the original fund.....	\$30,910 14
From interest on the extra fund.....	9,129 20
Balance in the hands of the treasurer at the beginning of the year 1852.....	7,296 76
	<u>47,336 10</u>

Expenditures.

For the building.....	\$14,047 07
For items common to the general objects of the Institution.....	11,505 80
For publications, researches, and lectures.....	12,224 48
For library, museum, and gallery of art.....	9,308 26
Balance in the treasury.....	250 49
	<u>47,336 10</u>

The following is a more detailed statement of the expenditures:

*Statement in relation to the Expenditures of the Smithsonian Institution
during the year 1852.*

<i>Building, Furniture, Fixtures, and Grounds.</i>		
Pay on contracts.....	\$10,000 00	
Pay of architects, superintendents, &c.....	1,839 83	
Expenses of Building Committee.....	7 50	
Miscellaneous incidental to building.....	1,198 64	
Furniture, &c., for uses in common.....	682 94	
Do. for library.....	265 15	
Do. for museum.....	3 56	
Grounds.....	49 45	
		\$14,047 07
<i>General Expenses.</i>		
Expenses of Board of Regents, &c.....	267 18	
Lighting and heating.....	399 70	
Postage.....	472 07	
Transportation.....	1,827 91	
Stationery.....	222 38	
General printing.....	350 42	
Apparatus.....	844 88	
Incidentals, general.....	2,821 34	
Salaries, general.....	4,299 92	
		11,505 80
<i>Publications, Researches, and Lectures.</i>		
Smithsonian Contributions to Knowledge.....	5,736 74	
Reports on progress of knowledge.....	1,616 75	
Other publications.....	1,007 86	
Meteorology.....	2,079 88	
Investigations.....	75 00	
Pay of lecturers.....	1,385 00	
Illustrations and apparatus for lectures.....	230 13	
Attendance and lighting, lectures, &c.....	93 12	
		12,224 48
<i>Library, Museum, and Gallery of Art.</i>		
Cost of books.....	1,098 77	
General catalogue.....	377 25	
Copyrights.....	52 00	
Stereotyping.....	1,305 28	
Incidentals to library.....	1,196 48	
Salaries, library.....	2,499 96	
Expenses of collections, museum.....	215 57	
Incidentals, museum.....	563 01	
Salaries, museum.....	1,999 94	
		9,308 26
Total expended in 1852		47,085 61

A general account of the operations of the Institution is given in the report of the Secretary, to which the Board are referred. The committee are happy to be able again to assure the Board, that in their opinion the operations are such as to carry out in the most effectual manner the wise and benevolent design of James Smithson, viz: that of "*increasing and diffusing knowledge among men.*" The only regret which can be entertained with regard to the present condition of the Institution is, that the funds are so encumbered with the restrictions

imposed upon them by the original charter, that more of the income cannot be devoted to the publications and other active operations.

Respectfully submitted:

J. ALFRED PEARCE,	} <i>Executive Committee.</i>
J. G. TOTTEN,	
A. D. BACHE,	

REPORT OF THE BUILDING COMMITTEE.

The Building Committee of the Smithsonian Institution presents the following report of its operations during the past year :

The contract between the Board of Regents and Gilbert Cameron has been declared completed, by Mr. Renwick. It includes the finishing of the exterior of the entire building, the interior of the extreme wings and connecting ranges, and the interior of the towers, leaving the whole interior of the main building to be finished. This comprises a space of two hundred feet long by fifty wide, and about sixty high, to be divided into a basement and two stories.

Mr. Renwick has presented to the Board his final decision as to the state of accounts between the Regents and the contractor. According to this, there is due to the latter the sum of \$11,607 24.

By a resolution of the Board, all the wood-work and framing which now occupies the interior of the main building is to be removed, and its place supplied by fire-proof materials. In accordance with the direction of the Regents, the committee have procured plans and estimates of the proposed work, which are herewith submitted for the consideration of the Regents. These plans differ in some respects from the original design of the main building, and the changes are such as materially to improve the edifice, rendering it more stable and better adapted to the purposes of the Institution. Should the plans presented be adopted, the committee would advise that the new work be commenced as soon as the preliminary arrangements can be made, and prosecuted as rapidly as the funds will allow. The experience of last year has shown that, beyond a certain degree, the extension of the time of completing the building does not tend to improve the condition of the funds. The cost of superintendence is in proportion to the time, and not to the work done; and a more advantageous arrangement can be made for finishing the remainder of the building at once than by doing it in detached portions, unless the whole work be stopped for some years. The present condition of the building would scarcely warrant this measure.

Mr. Renwick, in a letter to the Regents, signified his intention of declining further services to the Institution unless his account for full salary was paid by a specified time. The Board of Regents, considering themselves unauthorized to continue his large salary for an indefinite length of time after the end of the five years, which limited the duration of the original contract, passed a resolution that his claim should be paid, provided he would report as to the state of the account between the Board and the contractor previous to the discontinuance of his services. Mr. Renwick agreed to this proposition, and in accordance with it has presented his final report to the Regents.

After Mr. Renwick left the charge of the building the committee employed Captain B. S. Alexander, of the U. S. corps of Engineers, to prepare detailed drawings and plans for rendering the remainder of

the building entirely fire-proof. This gentleman is now engaged as superintendent in the erection of the military and naval asylum for the District of Columbia, and is highly recommended to the committee by the officers of the army and navy, as well as by the fact that so important a work has been intrusted to his superintendence.

Should the plans which are herewith submitted to the Board be adopted, the committee would recommend that Captain Alexander be appointed, with the consent of the superior of his corps, to superintend the completion of the building. As he is an officer of the army, on duty in this city, he will be enabled to give daily attention to the work at a comparatively small expense.

GRAHAM N. FITCH,	} <i>Building Committee.</i>
RICHARD RUSH,	
JOHN W. MAURY,	
JOSEPH HENRY,	

PROCEEDINGS
OF THE
BOARD OF REGENTS.

SIXTH ANNUAL SESSION OF THE BOARD OF REGENTS.

[Continued from last Report.]

WASHINGTON, *June 5, 1852.*

The Board of Regents was notified to meet this day at 11 o'clock. A quorum not being present, the Board adjourned to August 7, 1852.

WASHINGTON, *August 7, 1852.*

The Board of Regents met this evening at 7½ o'clock. Present: Messrs. Colcock, Fitch, Pearce, and Totten.

Mr. Maury, elected Mayor of Washington, and therefore *ex officio* Regent of the Smithsonian Institution, appeared and took his seat.

In the absence of the Chancellor, Mr. Pearce took the chair.

Mr. Fitch, from the Building Committee, presented to the Board a letter from James Renwick, jr., architect, informing the committee that the building, so far as it was embraced in the contract of Mr. Cameron, was completed, and recommending that six thousand dollars be advanced to the contractor from the fifteen per cent. kept back, in advance of Mr. Renwick's final certificate; also stating that it would take several days for him to make up his final award.

Mr. Fitch stated to the Board that there was now a suit pending between Mr. Cameron and his sub-contractor; and that though the Institution had no interest in this suit, the Regents had been informed that they were a party to the same. The Building Committee, therefore, thought it advisable to refer this subject to the Board.

In order to obtain further information on this point, it was, on motion, resolved to postpone the consideration until next meeting.

Mr. Fitch, from the Building Committee, also presented an account from Mr. Renwick for services from March 1 to June 1, 1852; which the committee did not feel themselves authorized to pay without an order from the Board.

Mr. Fitch also presented, from the same committee, a communication from Mr. Renwick to the Board, relative to his compensation, including another account for services to August 1, 1852.

Mr. Fitch presented a resolution relative to the payment of the accounts of Mr. Renwick, the consideration of which was postponed to the next meeting.

The Board then adjourned to Monday evening, August 9, at 7½ o'clock.

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WASHINGTON, *August 9, 1852.*

The Board of Regents met this evening at 7½ o'clock. Present: Messrs. Colcock, Mason, Maury, Pearce, and Totten, of the Board, and Mr. Seaton, treasurer; and, by invitation, Mr. Lenox, late Mayor of Washington.

In the absence of the Chancellor, Mr. Pearce took the chair.

The proposition to advance Mr. Cameron six thousand dollars from the fifteen per cent. retained by the Board was brought up for consideration, and after a full discussion of the same, the following resolution, offered by Mr. Mason, was adopted:

Resolved, That the Building Committee be requested to settle the accounts of Mr. Cameron, pursuant to his contract, and that any balance that may be found due be paid him, unless, in the discretion of the committee, under advice of counsel, it may be deemed prudent by them to pay the money into court, in the pending suit to which the Institution is a party, or to withhold it until further order of the Board.

The resolution offered by Mr. Fitch at the last meeting, relative to the accounts of Mr. Renwick, was taken up; and after being modified by General Totten, was adopted, as follows:


Resolved, That Mr. Renwick, having reported by letter to the Building Committee that the Smithsonian building is completed, be notified that his services as architect are no longer required by the Regents of this Institution, and that the bills he has presented for his services up to the first of August, 1852, will be paid as soon as he shall have rendered to the Regents his final certificate of the completion of the building, according to the terms of the contract with Dixon and Cameron, as modified on the 2d July, 1850; and if the building be not completed, the said bills shall be paid upon the rendition of his certificate showing the extent to which it is completed, and the particulars in which it is unfinished; together with any plans of the building, or papers, belonging to the Institution, which may be in his possession.

Resolved, That the Secretary be authorized to pay said bills, in accordance with the foregoing resolution.

The Secretary stated that the expiration of the term of service of Mr. Lenox as a Regent, has caused a vacancy in the Building Committee.

The Chair nominated Mr. Maury to fill the vacancy; and, on motion, the nomination was confirmed.

The following resolution, offered by Mr. Totten, was adopted:

Resolved, That the Board of Regents of the Smithsonian Institution have heard with deep regret the death of Mr. Andrew  Downing, late superintendent of the grounds of the Institution.

Resolved, That we entertain a grateful sense of the value of Mr. Downing's services in the department to which he devoted his life; and

while we bow with submission to this mysterious dispensation of Providence, we feel that his decease is an irreparable loss to this Institution, to the city of Washington, and in general a public calamity.

Resolved, That we tender to the family of the deceased the expression of our sincere sympathy in this time of their affliction.

Resolved, That the Secretary be requested to send a copy of these resolutions to the family of the deceased.

The Board then adjourned *sine die*.

SEVENTH ANNUAL MEETING OF THE BOARD OF REGENTS OF THE
SMITHSONIAN INSTITUTION.

WASHINGTON, *January 5, 1853.*

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of the beginning of their annual meeting on the first Wednesday of January of each year, the Board met this day in the Regents' room, over the south entrance of the main building.

Present: Messrs. Mason, Maury, Meacham, Rush, and Totten, of the Board; and Mr. Seaton, treasurer of the Institution. Mr. Charlton, the new member appointed from the Senate U. S., was present and took his seat at the Board.

In the absence of the Chancellor, Mr. Rush was called to the chair.

The Secretary informed the Board that there were two vacancies in the list of Regents, and that the Senate had passed a resolution to fill these, which was now before the House of Representatives for concurrence. Also, that there was a vacancy in the Executive Committee, which prevents the drawing of the semi-annual interest from the treasury and the settlement of the accounts of the past year.

On motion of Mr. Mason,

Resolved, That the vacancy in the Executive Committee be filled by nomination of the Chair.

Whereupon, Mr. Mason was appointed.

The Secretary informed the Board that the accounts and reports relative to the operations of the last year would be ready for presentation at the next meeting.

Whereupon, the Board adjourned to Saturday the 15th inst., at 10 o'clock a. m.

WASHINGTON, *January 15, 1853.*

The Board of Regents met this day at 10 o'clock in the Regents' room. A quorum not being present, the meeting adjourned to 22d inst., at 11 o'clock a. m.

WASHINGTON *January 22, 1853.*

The Board of Regents met this day at 11 o'clock a. m. Present: Messrs. Charlton, Colcock, Maury, Meacham, Pearce, Rush, Totten; Mr. Seaton, treasurer; and Washington Irving, honorary member.

In the absence of the Chancellor, and on motion of Mr. Rush, Mr. Pearce took the chair.

The proceedings of the previous meeting were read and approved.

The Building Committee submitted their report, which was read and adopted.

The Secretary presented the report and final decision of James Renwick, Jr., which was read, and, on motion of General Totten, referred to the Building Committee.

The plans for finishing the central building, by Captain B. S. Alexander, corps of Engineers U. S., were presented and examined.

On motion of General Totten, the following resolutions were adopted:

Resolved, That the plans for finishing the interior of the centre building presented by Captain B. S. Alexander, corps Engineers U. S., be adopted by the Board of Regents, reserving the right, in behalf of the Building Committee, of altering the details thereof to such an extent as may seem to them proper as the work proceeds.

Resolved, That Captain Alexander be requested to give to the general supervision of the execution of his plan such time as his public duties will permit, and that he be compensated therefor to such amount as to the Building Committee shall seem just and proper.

The treasurer presented the details of the expenditures; which was, on motion, referred to the Executive Committee.

The Secretary presented his report of the operations of the Institution for the past year; which was, in part, read.

The Board then adjourned to Friday evening next, 28th instant, at 7½ o'clock.

WASHINGTON, *January 28, 1853.*

The Board of Regents met this evening at 8 o'clock in the Regents' room. Present: Messrs. Bache, Charlton, Colcock, Mason, Meacham, and Totten, of the Board, and Washington Irving, honorary member.

In the absence of the Chancellor, and on motion of Mr. Rush, Mr. Mason took the chair.

The Secretary announced to the Board that Professor A. D. Bache, of Washington, had been re-elected, by a joint resolution of the two houses of Congress, a Regent for six years; and also that the Hon. John Macpherson Berrien, of Georgia, had been elected a Regent for the same term. Mr. Bache being present, took his seat in the Board.

The proceedings of the last meeting were read and approved.

The Secretary made a statement relative to the expedition under the direction of Dr. E. K. Kane, U. S. Navy, and his want of instruments for magnetic observations in the Arctic seas, referring at the same time to the expedition to Chili, of Lieut. Gilliss, U. S. Navy, to whom a timely and highly useful grant had been made by the Board, under similar circumstances, and which had been reimbursed to the Institution.

Mr. Rush offered the following resolution, which was adopted :

Resolved, That a sum not exceeding five hundred dollars be, and the same is hereby, appropriated for the purchase of philosophical instruments to be used in the new expedition in search of Sir John Franklin in the Arctic seas, and which are to be committed to the charge of Dr. E. K. Kane, of that expedition.

The Secretary presented the application of the Rev. Mr. Dennison for the use of the lecture-room for holding religious service therein, which was referred to the Secretary.

The Secretary presented the case of Stanley's gallery of Indian portraits, for which, if they should be purchased by the government, the use of the gallery of art was considered necessary as a temporary place of deposit : also referred to the Secretary.

The reading of the annual report was then continued, including the report of Prof. Baird, Assistant Secretary, relative to exchanges.

Mr. Mason expressed a desire to resign his place as member of the Executive Committee, which he had accepted with a view to the re-appointment of Mr. Bache as Regent, and his subsequent re-election as a member of the Executive Committee.

The resignation of Mr. Mason was accepted, and Mr. Bache re-elected.

A letter was presented from Gilbert Cameron, requesting, on account of his reputation, to be allowed to finish the centre building, and claiming this privilege as a right under his general contract : referred to the Building Committee.

The Board then adjourned to Thursday evening, February 3, at 6½ o'clock.

WASHINGTON, *February 3, 1853.*

The Board of Regents met this evening at 8 o'clock. Present : Messrs. Bache, Charlton, Colcock, Mason, Maury, Meacham, and Totten, of the Board, and Washington Irving, honorary member.

Mr. Mason took the chair.

The proceedings of the previous meeting were read and approved.

The Building Committee, to which was referred the letter of Mr. Cameron relative to his right to the contract for finishing the centre building, reported progress, and presented a communication from Mr. Carlisle upon this subject, which was then referred back to the committee.

The Secretary presented a plan of a building for a magnetic observatory near the Institution ; stating, also, that instruments of the best construction, now in the possession of the Superintendent of the U. S. Coast Survey, would be furnished.

Mr. Colcock offered the following resolution, which was adopted :

Resolved, That a magnetic observatory be erected, under the supervision of the Building Committee, at such place on the grounds of the Institution as they may select, and according to a plan to be approved by them, and that the sum of eleven hundred dollars is hereby appropriated therefor.

A communication from Captain Lefroy, R. A., was presented and read, relative to the discontinuance of the magnetic observatory of Toronto, Canada West: referred to the Executive Committee and the Secretary, who were requested to memorialize the British government on the subject.

The correspondence between the Secretary and Mrs. A. J. Downing, upon the transmission of the resolutions of the Board upon receiving information of the death of Mr. Downing, was read.

The Secretary also informed the Board of the recent death of Sears C. Walker, esq., and of Prof. C. B. Adams, of Amherst College, Massachusetts; whereupon the following resolutions, offered by Mr. Bache, were adopted:

Resolved, That the Regents of the Smithsonian Institution have heard with deep regret the announcement of the death of Sears C. Walker, esq., whose communications in the Smithsonian Transactions on the planet Neptune have attracted the notice and won the approval and admiration of astronomers throughout the world.

Resolved, That the Regents offer to the family of Mr. Walker their condolence on the loss which they have sustained.

Resolved, That the Regents of the Smithsonian Institution have heard with regret the decease of their valued correspondent, Prof. C. B. Adams, which occurred at St. Thomas, while he was engaged in making collections in natural history, to which science he was devoted; and offer to his family their condolence on the loss which they have sustained.

The Board then adjourned, to meet on Saturday, the 12th inst., at 10 o'clock a. m.

WASHINGTON, *February 12, 1853.*

The Board of Regents met this day at 10 o'clock a. m. Present: Messrs. Bache, Fitch, Maury, Meacham, and Pearce, of the Board, and Washington Irving, honorary member.

On motion, Mr. Pearce took the chair.

The proceedings of the previous meeting were read and approved.

Mr. Bache, in behalf of the Executive Committee, presented a letter to be forwarded to the British Home and Colonial governments, to urge the continuance of the Toronto observatory.

The Secretary presented to the consideration of the Board the necessity of making provision for the investment of the surplus fund in the event of the petition now before Congress relative to it not being acted on.

The Chair stated it to be the opinion of Mr. Corcoran, who had been present, that the State stocks of North Carolina would be a suitable and safe means of investment: referred to the Executive Committee.

The Secretary presented for the examination of the Board a manuscript memoir, by J. A. Lapham, relative to the mounds of Wisconsin, received from the American Antiquarian Society of Worcester, and mentioned in the sixth Annual Report.

The Secretary presented the case of the late Prof. C. B. Adams, whose draft for one hundred and fifty dollars had been honored by the

Institution. A letter from Thomas Bland, esq., on the part of the family of Prof. A., was read, offering to refund the money or send to the Institution a portion of the collections in natural history made by Prof. Adams in his last expedition.

The subject was referred to the Secretary, with the understanding that the collections be accepted, and that the repayment of the money be not required from the executors of Prof. Adams.

The Secretary presented the subject of the compensation of Dr. J. G. Flügel, of Leipsic, the agent for Smithsonian exchanges in Central Europe.

The following resolution, offered by Mr. Bache, was adopted :

Resolved, That the compensation of Dr. J. G. Flügel, agent at Leipsic for the reception and distribution of publications on the part of the Smithsonian Institution for Central America, be three hundred dollars per annum until otherwise ordered by the Board.

The reading of the Secretary's report was continued, including an account of the operations in meteorology during the past year; also including the operations relative to the library, under the care of Prof. Jewett.

An extensive collection of MS. bills, inventories, and other accounts of business in private English families, from 1632 to 1750, in fifty-four volumes, presented by Mr. J. O. Halliwell, was laid on the table for examination; and, on motion, the following resolution was adopted :

Resolved, That the Secretary be requested to transmit to Mr. J. O. Halliwell, of London, an expression of the grateful sense entertained by the Board of Regents of the munificent gift received from him, and of the honor done the Institution by selecting it as a place of deposit for these interesting documents.

The operations of the stereotyping department were presented by the Secretary, and a statement made of its capability of preparing and printing catalogues of all the libraries in the United States.

On motion, the following preamble and resolution were adopted :

Whereas a plan for stereotyping catalogues by separate titles, and for preparing and printing the catalogues of the various libraries in the United States in uniform style, and at greatly diminished cost, as well as for forming a general catalogue of all these libraries, was presented to the Smithsonian Institution and referred to two commissions—one to report upon the literary advantages of the plan, and the other upon the practicability of the means proposed for its execution :

And whereas, on the recommendation of these commissions, the Smithsonian Institution has incurred the expense of procuring type and apparatus, of educating workmen, and of developing and perfecting processes to be employed, so that all arrangements are now made for the successful prosecution of the work :

And whereas the first commission appointed to examine the plan, in their report, recommended that, "In order that a beginning might be made in the execution of the plan under circumstances highly favorable to its success, the undersigned take the liberty of suggesting that it would be advisable for the Regents of the Smithsonian Institution to obtain the requisite authority to prepare a catalogue of the library of Congress on the above described plan:" Therefore,

Resolved, That the Secretary of the Institution be requested to call the attention of the Library Committee of Congress to the above described plan, to inform them that the Institution is now ready to execute the proposed work, and to invite their co-operation in aid of an enterprise so important to the library of Congress, to all the libraries in the country, and to the great object of this Institution, "the increase and diffusion of knowledge."

Mr. Pearce, as chairman, presented from the Executive Committee their annual report in relation to the finances and expenditures of the Institution during the year 1852.

The Board then adjourned, to meet at the call of the Secretary.

ERRATUM.

For the date of Professor Henry's letter transmitting Report, read "March 1, 1853," instead of "August 20, 1852."

DATE DUE

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